DECEMBER 1957

American MILK REVIEW

PENNSYLVANIA TRAGEDY
See Letters to Editor
Page 17

37.105
M35

Flavor Control Equipment 44

Fuel Oil Change Saves Money 88

Modified Sweetened Cream New Product 64

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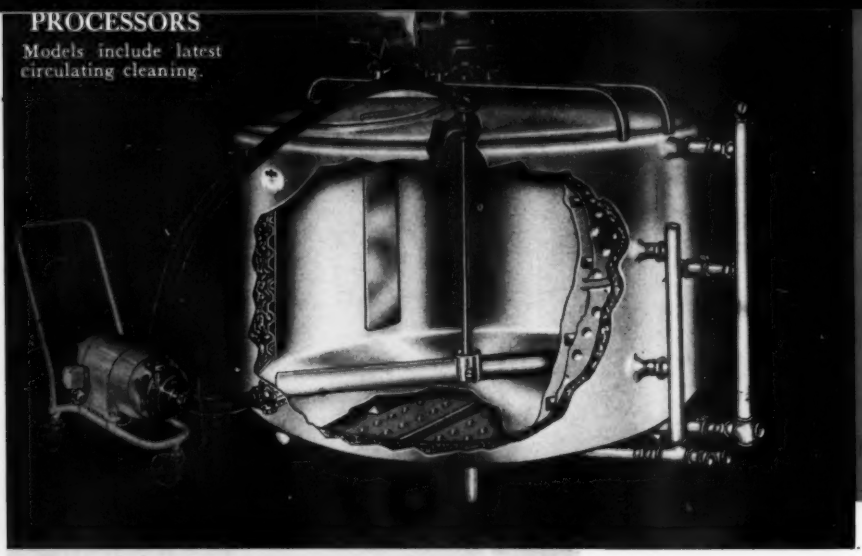

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Dairy Equipment
GIRTON MFG CO

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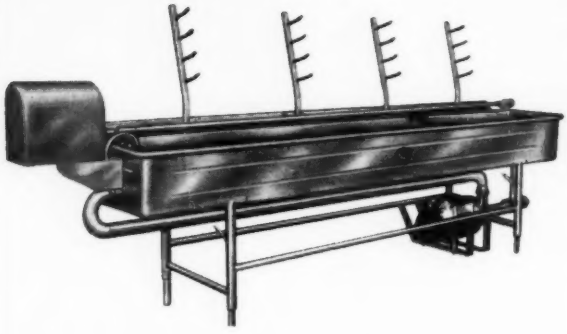
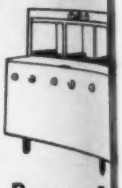
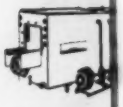


SANITARY PIPE WASHING EQUIPMENT



Pressure Be
Washers



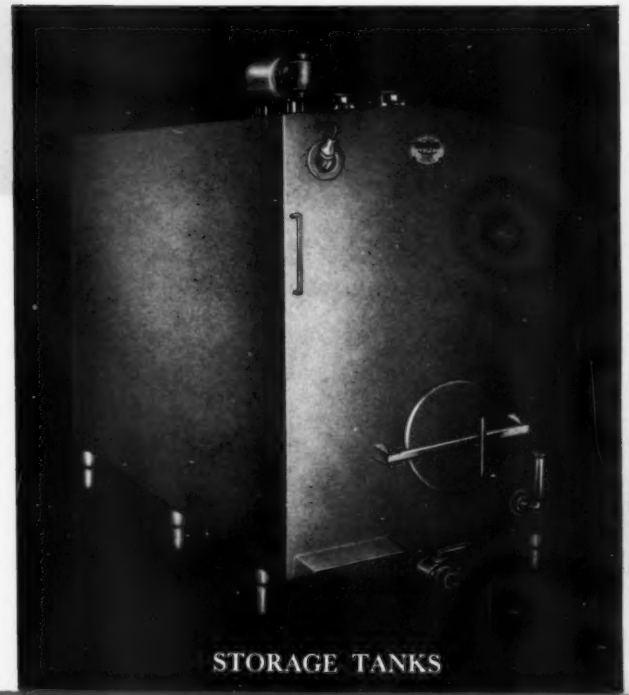
Case and B
Washers

Soaker Wash

Mixer –
Blender –
Cream

Pumps

CIRCULATING PARTS WASHERS



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An Urner-Barry Publication

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Contents for December, 1957 *Vol. XIX No. 12*

General Interest

Letters to Editor 17
Short Timers 20
Editorial 24
Write The Gag 67
News From State Capitols 90

Management

Predict Little Change In Consumption 34
On The Legal Side 52
Fundamentals of Organization 56
Labor Relations 74
Idaho Firm Wins Safety Award 78
Sanitary Regulations As Trade Barriers 80
Net Profits Up For Chains 84

Plant

Quality Control Committee In Twin Cities 28
Industry Problems 36
Steam Injection Systems 44
Plant Clinic 54
Truck Talk 70
Fuel Oil Change Saves Money 88

Sales

Money Making Cheese Shop 40
Concentrated Milk Prospects 62
Modified Sweetened Cream New Product 64
Mellorine Production Up One Per Cent 66
Gallon Jug Strong In Maryland and Ohio 84

Where to Buy It

Product News 98
Wants and For Sales 104
Index To Advertisers 108

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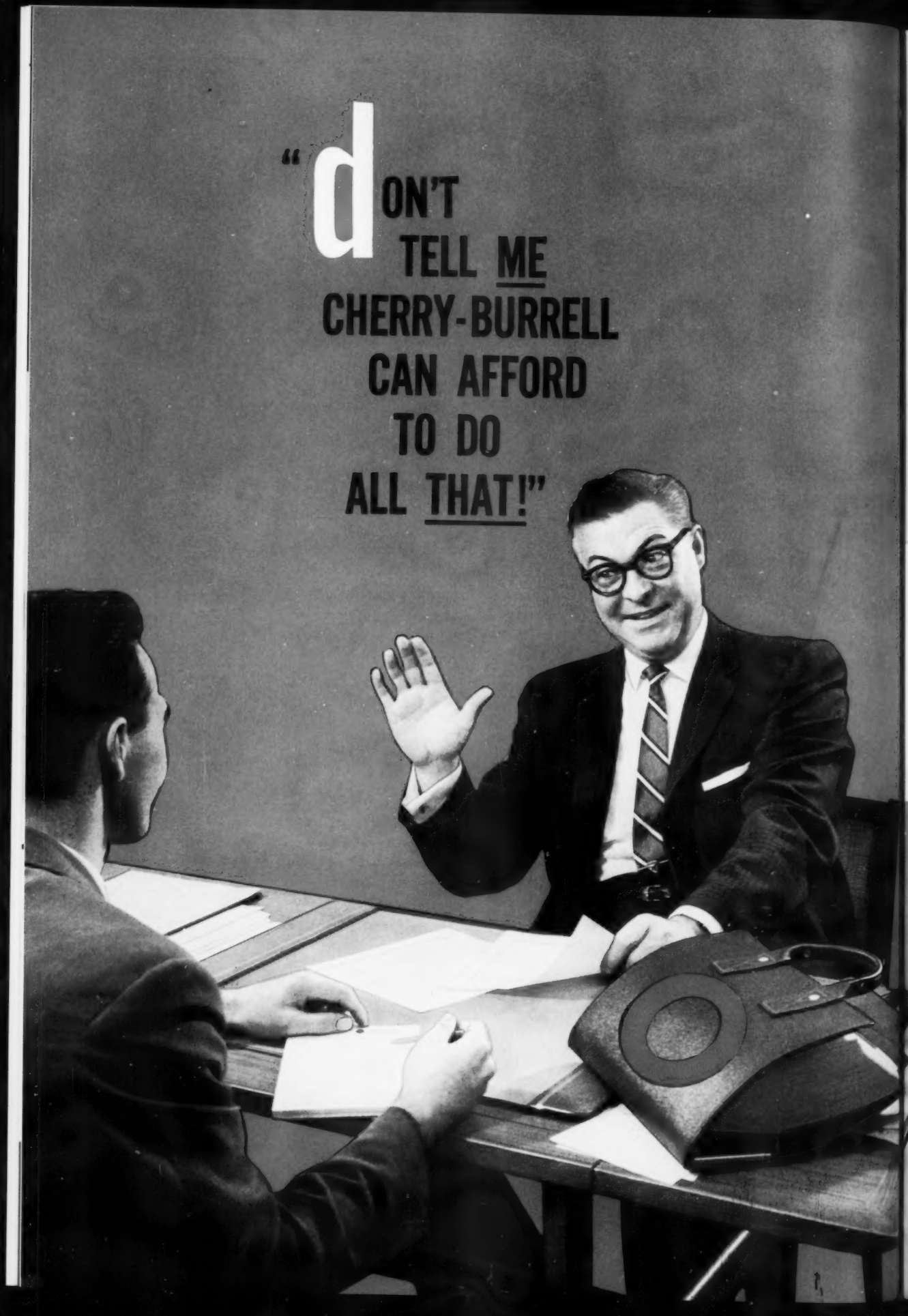

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AND WHAT IS "ALL THAT?"

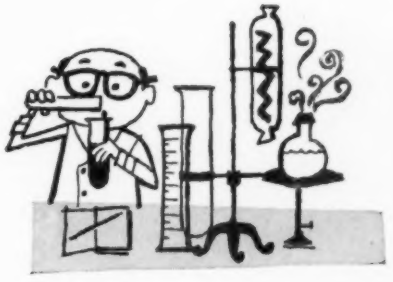
AT CHERRY-BURRELL it's just the most *complete, comprehensive* and *continuous* Process Engineering Service available anywhere. If this "don't tell me" operator finds it hard to believe, you can't blame him. He has had too much experience buying a piece of equipment, getting some installation help and then . . . that's all.

When you do business with Cherry-Burrell, however, it's no let-the-buyer-take-care-of-his-own proposition. Process Engineering Service that pays off for the customer is not just a fine phrase with us . . . it's a philosophy—our way of doing business. One that has paid dividends for years—for our customers.

Present a problem to Cherry-Burrell and a *group* of men *pool* their experience on what is the best possible solution for *you*.

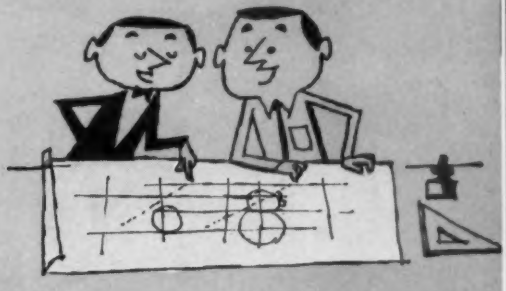
Our Research and Development People,

for example, get into the act—fast. They're continually testing equipment under all operating conditions, on all types of products . . . know how the latest processing developments can be applied to your plant.



Our Process Engineers

can recommend, lay out and put into operation the system that will operate most profitably for you. They know processing machines *individually*, of course. They *also* know the correct relationship of machine to machine, so that you get a system whose total value is *greater* than the sum of its parts.



For further information about these readily available Cherry-Burrell services—and many others—call your local Cherry-Burrell Branch Representative.

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SALES AND SERVICE IN 58 CITIES — U.S. AND CANADA

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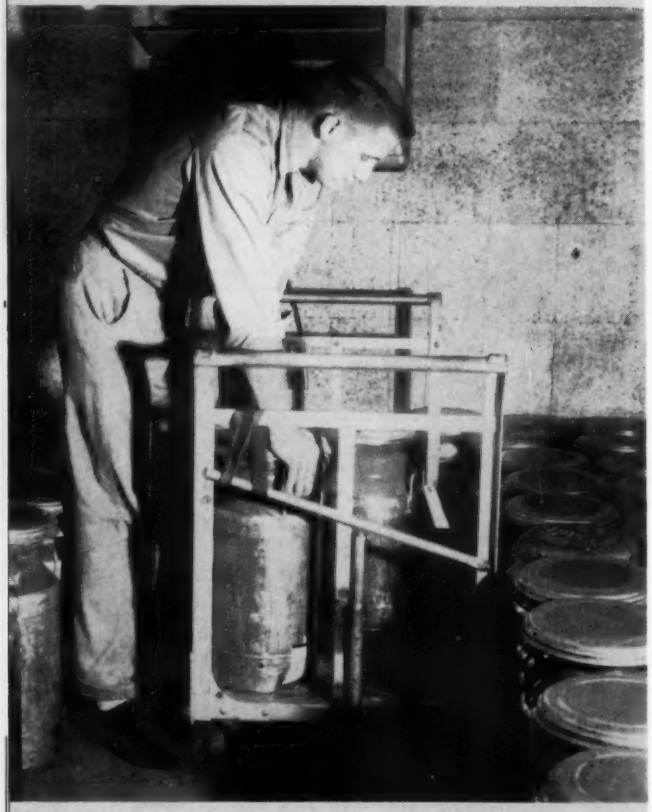
ISALY'S finds

ISALY'S of Youngstown, Ohio unloading 95 five gallon cans of dispenser milk for Pringle Vending at Farrel, Pennsylvania.

WILLIAM PRINGLE, owner of the Cup-O-Matic bulk venders, operates in Westinghouse Electric plants at Sharon and Greenville; Wheatland Tube Company and Saw Hill Mfg. in Wheatland; and Farrell Fabricating Co. in Farrell, Pa. He is steadily expanding in bulk vending because the fresh, foamy cold milk in paper cups sells itself. He has no cartons to handle, no leakers, no "returns". Some machines sell six or more five-gallon cans per 24 hour day. His labor cost is low — his sales volume high. Bill Pringle agrees with Paulo that a "bright future" is ahead for bulk milk vending in factories.



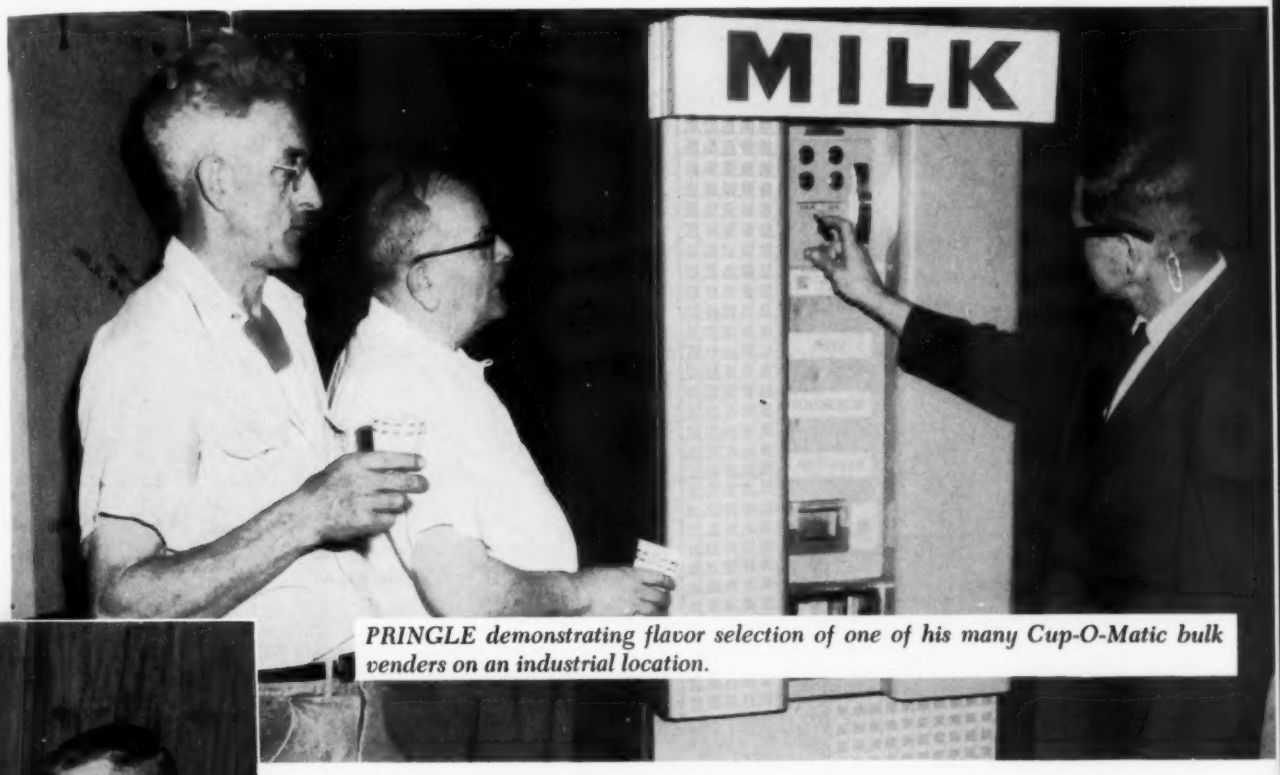
PRINGLE'S cooler holds several hundred cans in readiness for the Cup-O-Matic bulk milk venders scattered throughout industrial plants at Sharon and Farrell, Pa.

BILL PRINGLE, bulk milk vending pioneer, discussing his requirements with Walter Paulo (left) General Manager of the Isaly Dairy Company.

XUM

a new market

SELLING BULK milk to a Vending Machine Operator



PRINGLE demonstrating flavor selection of one of his many Cup-O-Matic bulk venders on an industrial location.

ISALY'S DAIRY finds that working with vending machine operators pays off in increased volume, at substantial profits. Walter Paulo, General Manager of Isaly's, is greatly enthused over the results of his tie-in with Pringle Vending Company. "We see a very bright future for bulk milk vending. Pringle has done a fine job. We expect this business to grow, and we've invested in the proper cans and equipment to take care of this type of business".

"The CUP-O-MATIC"

NAtional 2-8407 • P. O. Box 1026

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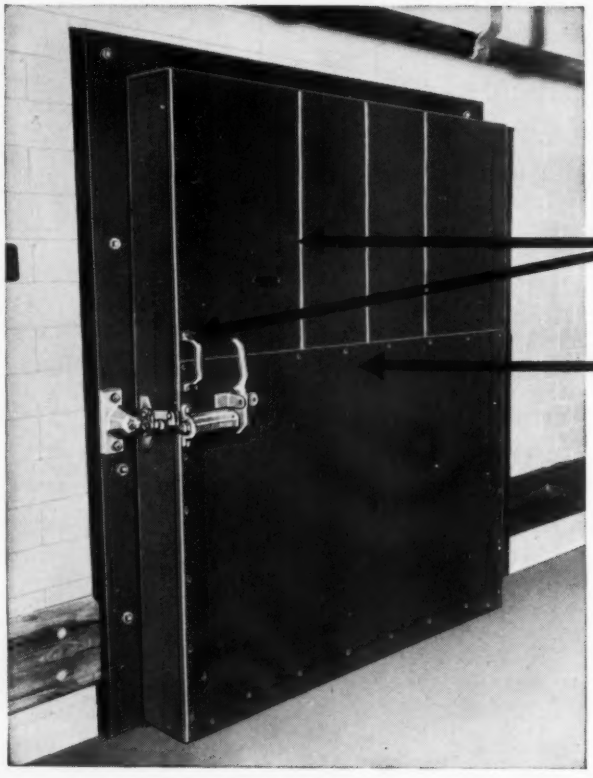

batten doors and
vestibule save refrigeration

metal cladding on frame and back of door
for protection from vapor and moisture

exclusive Jamison Vap-r-tyt* construction for
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and soldered seams and sealed bolt holes

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of door for protection against bumping and abuse

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The publisher of this magazine is often asked what kind of a man you are . . . and how many like you are receiving his magazine.

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Because the *advertisers* (whose money is his chief income) insist upon knowing the types of people (by industry or profession, by title) for whom the magazine is edited — and how many are getting it.

In order to standardize on the presentation of such information to advertisers and to have its accuracy vouched for by a disinterested third party, nearly 450 publishers have joined some 200 leading advertisers and advertising agencies in a non-profit organization called Business Publications Audit.

The purpose of BPA is to assure advertisers . . . by frequently checking and rechecking . . . that each member publisher is indeed distributing his magazine, in the *numbers* promised, to the *types* of men he promised would receive it.

The BPA symbol in this magazine means that *you belong* . . . that because of your occupational interests you are qualified, in the eyes of the advertisers, to receive it.

The advertiser can thus tell whether he's getting his money's worth.

The publisher has a better sales story to prospective advertisers because his magazine is "audited."

And you, the reader, get more value from the magazine because both the advertisers and editors, knowing what your special occupation is and what your interests are, are better able to prepare advertising and editorial material that will be most informative and useful to you.

What you can do

Publishers and advertisers frequently write to magazine readers to learn what kind of articles and advertisements appeal most. Cooperate with them — will you? — by answering their questions . . . in the interest of better communications between makers and markets.

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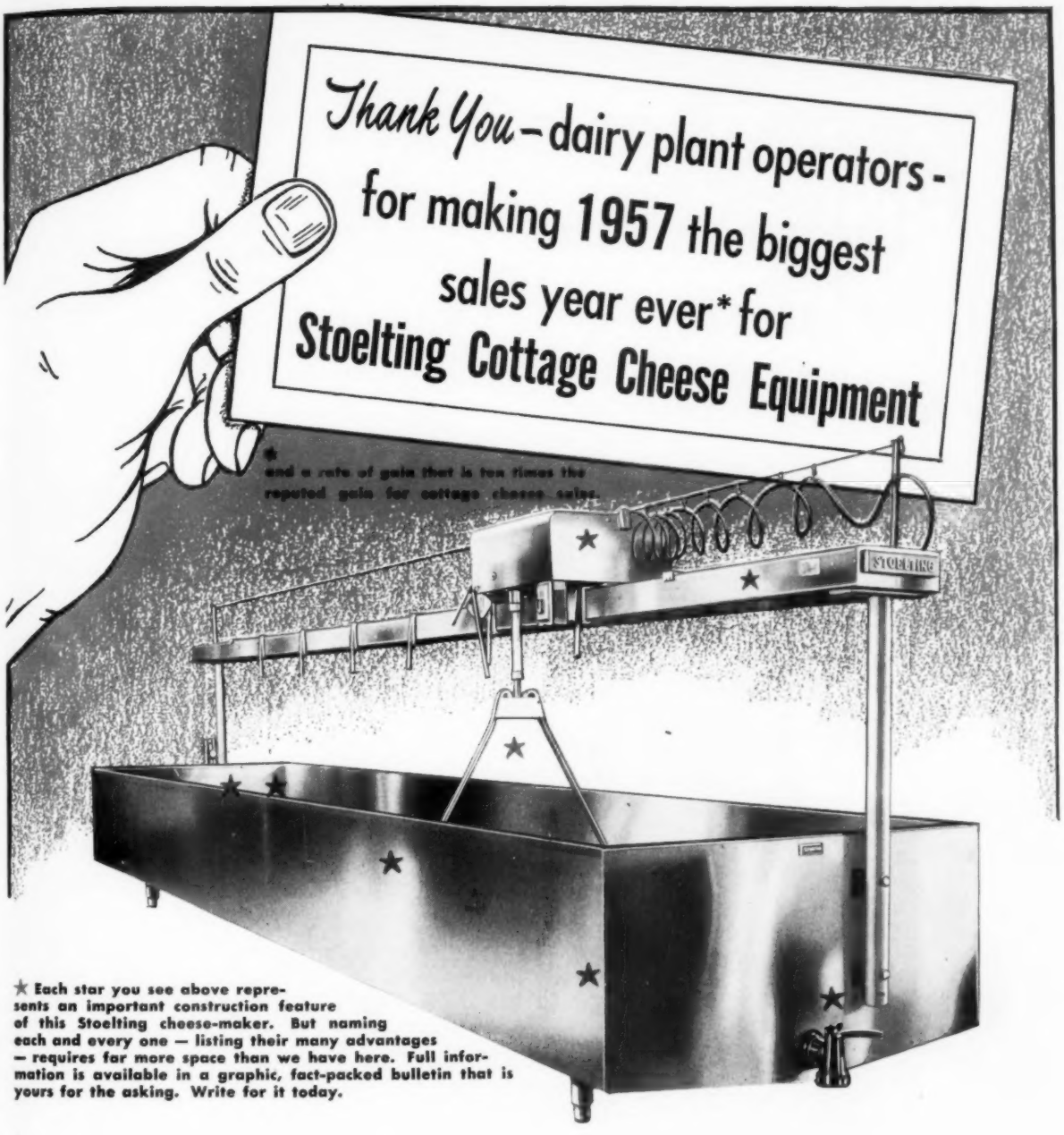
Thank You – dairy plant operators - for making 1957 the biggest sales year ever* for Stoelting Cottage Cheese Equipment
* and a rate of gain that is ten times the reputed gain for cottage cheese sales.
STOELTING

★ Each star you see above represents an important construction feature of this Stoelting cheese-maker. But naming each and every one — listing their many advantages — requires far more space than we have here. Full information is available in a graphic, fact-packed bulletin that is yours for the asking. Write for it today.

Leadership in any industry is not self-assumed. It is the opinion of others that places you there. That is why we are particularly proud of the nation-wide preference that is manifest for Stoelting cottage cheese making equipment.

This year 46 plants, from coast-to-coast, looked over the field and decided Stoelting was *best* for them. The reasons that influenced this decision are crystal clear:

1. **an improved, more uniform, better-tasting product.**
2. **increased standards of sanitation, more easily maintained**
3. **savings in time and labor that lower costs.**

If you are going to do something *more*, and better, about the booming market for cottage cheese, we'd be more than happy to give you the money-making facts on Stoelting equipment. As Step One in that direction, why not write for an illustrated data bulletin.

STOELTING Brothers Co., Kiel, Wisconsin

Since 1905 — Manufacturing Engineers to the Dairy Industries

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Honest Injun!

HW Soaker Alkali cleans 'em in the hardest water

Cherokee's municipal water supply measures a rock-smashing 120 grains — probably the hardest in the U. S.

If you're stuck with scale formation and filmy bottles, and your water seems this hard, HW Soaker Alkali® will make your bottles come clean!

This DIAMOND compound contains caustic soda, complex phosphates and wetting agents. You add nothing. No water softeners or other additives. HW Soaker completely softens hard water, rinses freely and controls scale formation. You'll notice, too, it gradually removes the scale deposits on your machine.

HW Soaker Alkali reduces alkali consumption and carry-over. It lubricates all moving parts exposed to the soaker solution. Best of all, you turn out sparkling, spotless, film-free bottles.

Your DIAMOND Representative can recommend the right bottle-washing compounds and equipment cleaners for your operation. Get in touch with him now — or order from one of the distributors listed below. DIAMOND ALKALI COMPANY, 300 Union Commerce Bldg., Cleveland 14, Ohio.

Cherry - Burrell Corp., Meyer - Blanke Co., The Hurley Co., Miller Machinery & Supply Co., Monroe Food Machinery, Inc.

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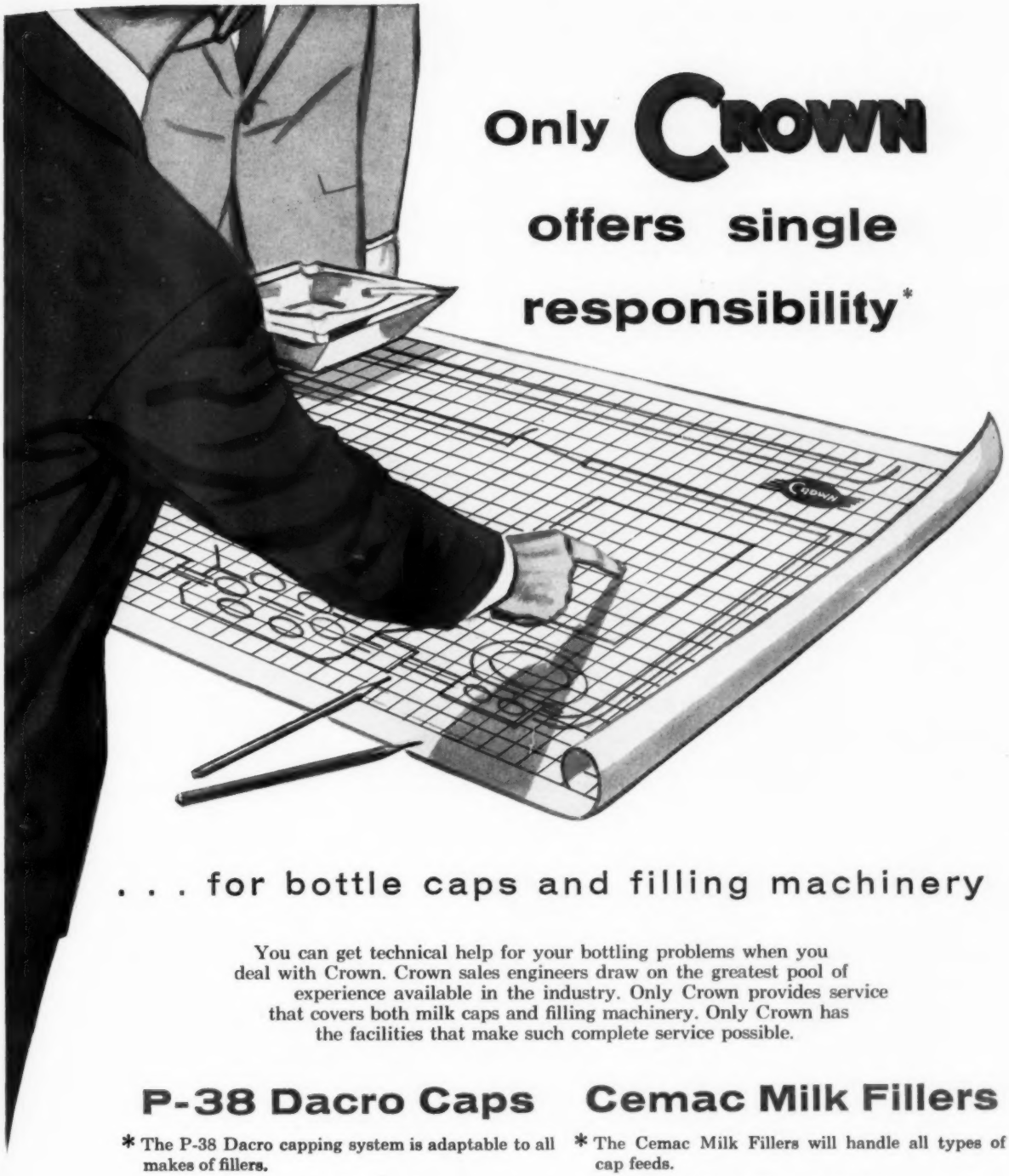

Only CROWN offers single responsibility*

. . . for bottle caps and filling machinery

You can get technical help for your bottling problems when you deal with Crown. Crown sales engineers draw on the greatest pool of experience available in the industry. Only Crown provides service that covers both milk caps and filling machinery. Only Crown has the facilities that make such complete service possible.

P-38 Dacro Caps

* The P-38 Dacro capping system is adaptable to all makes of fillers.
- Saves 15c or more per 1,000 over larger caps.
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- Eliminates hooders, cap makers, feeding devices.
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Cemac Milk Fillers

* The Cemac Milk Fillers will handle all types of cap feeds.
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- Simple three - piece filling valve.
- Handles all sizes and styles of bottles. Special equipment for half gallons and gallons.

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SIMONE
Mid-West

Season's Greetings

FROM OUR SALES STAFF

C. E. Erickson Co., Inc. Des Moines, Iowa

A Merry Christmas and a Happy New Year

Now Hear This!

TRAGEDY

Dear Mr. Myrick:

I am enclosing a photograph of my tank truck at a recent fire and tragedy of one of my former milk producers.

This barn fire was at the Peter Nitch farm located in Somerset County approximately four miles from my plant. The tragedy of not only losing his barn but also his son and two nephews is almost indescribable.

My truck hauled four tanks of water totaling 8,800 gallons and supplied the fire pumpers to keep the fire from spreading to the home and other buildings. With the aid of my present producers, we presented a sizable sum of money to aid in some small way for their loss.

W. W. Alwine

The three boys were in their early teens. They had apparently been tunneling in the hay and were trapped when the fire broke out. Cause of the fire is undetermined. Mr. Alwine's truck hauled water from a hydrant near his plant to the fire, a distance of about 3 miles. Alwine's Dairy is located on the outskirts of Johnstown, Pennsylvania.

●

SIMPLIFIED BUSINESS FORMS

Dear Mr. Myrick:

I have been reading Mr. D. D. Seltz's article on business failures and would like to obtain some business forms like the one appearing on pages 85 and 86 of the October issue of *American Milk Review*.

I found the article very interesting and I think I can use the forms to advantage. Thank you very much.

Wisconsin

This is one of many letters we received inquiring about the forms mentioned in the article. If you are interested in these forms we suggest that you write to Mr. D. D. Seltz, 121 East 31st St., N. Y. 16.

●

WHAT IS A BUSINESS WORTH?

Gentlemen:

In the probate of an estate which we are handling, a problem has arisen with respect to the valuation of stock in a small family-owned dairy company. In determining the value of such stock, the Internal Revenue Service compares the earnings of the company under consideration with those of other companies in the same field, and accordingly, the earnings of dairy companies in general, will be of particular significance.

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✓SHARPLY SEPARATED EMBOSSED PATTIES
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Haynes Spray

U. S. P. LIQUID PETROLATUM SPRAY
U.S.P. UNITED STATES PHARMACEUTICAL STANDARDS

SANITARY—PURE
ODORLESS—TASTELESS
NON-TOXIC

CONTAINS NO ANIMAL OR VEGETABLE FATS. ABSOLUTELY NEUTRAL. WILL NOT TURN RANCID — CONTAMINATE OR TAINT WHEN IN CONTACT WITH FOOD PRODUCTS.

This Fine Mist-like HAYNES-SPRAY *should be used to lubricate:*
SANITARY VALVES
HOMOGENIZER PISTONS — RINGS
SANITARY SEALS & PARTS
CAPPER SLIDES & PARTS
POSITIVE PUMP PARTS
GLASS & PAPER FILLING MACHINE PARTS
and for ALL OTHER SANITARY MACHINE PARTS which are cleaned daily

THE MODERN HAYNES-SPRAY METHOD OF LUBRICATION CONFORMS WITH THE MILK ORDINANCE AND CODE RECOMMENDED BY THE U. S. PUBLIC HEALTH SERVICE • • • •

THE HAYNES-SPRAY THIN FILM LUBRICANT HAS HUNDREDS OF APPLICATIONS IN HOME & INDUSTRY
PACKED 6-12 oz. CANS PER CARTON
SHIPPING WEIGHT—7 LBS.

The Haynes-Spray eliminates the danger of contamination which is possible by old fashioned lubricating methods. Spreading lubricants by the use of the finger method may entirely destroy previous bactericidal treatment of equipment

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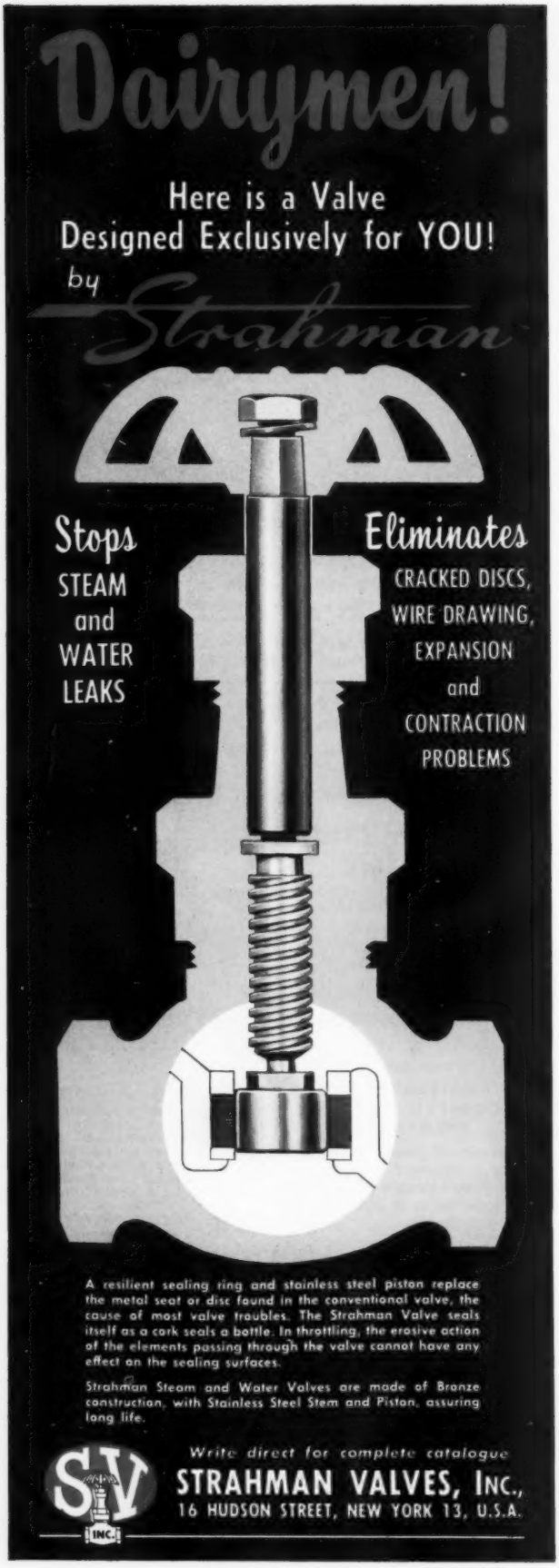
SNAP-TITE NEOPRENE GASKETS • NEOPRENE COVERED WRENCHES • "SLIP" CHAIN LUBRICANT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STEAM
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WATER
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If any of your publications have included any articles which deal in any way with the profits of dairy companies, we would appreciate it if you could indicate the issue number and also let us know how we can obtain copies of those issues. In this connection, any articles which discuss the economic outlook of small dairy companies or which discuss the effect that new items, such as frozen or sterile milk, might have upon small dairy companies, would also be very helpful.

Our client, of course, is a subscriber to your publication, but unfortunately the back issues have not been retained and therefore we have not been able to check through them ourselves.

Illinois.

The question raised here is a fundamental one. It was discussed extensively in an article entitled "The Value of A Business," By M. J. Kluger, that appeared in the February, 1954 issue of the "American Milk Review."

The outlook for small dairy companies has been discussed in detail in the April 1956 issue and in the March 1957 issue. The question of frozen and sterile milks and, for that matter, concentrates, is a speculative proposition. They are possibilities which, if they materialized, would have the most profound effect on the fluid milk industry.

●

FIVE DAY DELIVERY

Dear Sir:

We are interested in securing information concerning a five day per week delivery system as opposed to three day delivery. Another possibility is four day per week delivery with the fifth day being used by the driver for solicitation.

Do you know of any companies in any part of the country that have used such a plan?

New Jersey.

We assume that our correspondent means delivery to a specific customer every five days when he refers to five day per week delivery. There has been some consideration of this possibility where small customers are concerned. Mr. Vernon Hovey, Jr., president of the General Ice Cream Corporation of Schenectady, New York, reported on investigations his company had been making in this direction at a meeting of the New England Milk Dealers Association in 1956. Some of the firms using home milk dispensers report that deliveries to customers using dispensers are reduced to one or two times per week. However, we do not know of any market where this type of distribution has achieved the stature of a regular practice.

If our correspondent means that routemen work five days a week or that deliveries are made only five days a week with two no-delivery days we will take a little more space and do a little more digging.

TETRA PAK

the new shape for new profits

the only NEW SHAPE in Dairy Packaging in years

the new convenience for storage and use

the new economy for manufacturer, retailer and consumer

The Story with FOUR SIDES—and all four sides form the growing international fame of Tetra Pak, the world's newest, most advanced packaging.

Tetra Pak is ideal for individual milk, cream, ice cream and juice packages. Also for whipping cream and other dairy products.

Dairies in 22 countries are giving better service to supermarkets, schools, institutions, industrial plants, military installations, hospitals, mass feeding caterers and concessionaires with Tetra Pak.

Tetra Pak is heat sealed, keeps products full-flavored, fresh, tamper-proof, sanitary. Opens easily. The Tetra shape literally falls into less storage space, nests itself.

There's a Tetra Pak machine to produce the size package you need—½ oz. and up. Only ONE OPERATOR required.

For full details WRITE or PHONE:

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Short Timers

from the EDITOR

Michigan Governor Studies Milk Control in Other States

Michigan's disturbed dairy farm situation and pressures for remedial measures were behind the recent visit of Governor Williams to Pennsylvania and New York. Conferences with both Governor Leader at Harrisburg and Governor Harriman at Albany centered on the milk problem.

In New York Governor Williams and his staff discussed the relationship between state and federal marketing regulations with Commissioner Dan Carey, Market Administrator Charles Blanford, and Dr. Everett Case, Chairman of the Committee that drew up the famous Case Report which is credited with the subsequent extension of Federal Order 27 in its present huge proportions.

Governor Williams' office told the American Milk Review that the trip was purely a fact finding tour designed to familiarize the Governor with the operation of systems in other states. On December 10, the Governor with members of his staff will go to Richmond to study the work of the Virginia milk control law.

Governor Williams was reported as being impressed with the wide differences in conditions that prevailed between markets. He was also said to have been well pleased with the results of the trip, principally because the visits gave him a better grasp of the problems involved in developing legislation affecting the milk business.

Milk Wagon Drivers Active in Opposition to J. R. Hoffa

A rank-and-file member of a New York Teamsters local and the head of a Chicago Milk Drivers union played prominent roles in the dramatic conflicts that accompanied the election of James R. Hoffa to the presidency of the International Brotherhood of Teamsters. The activities of these two men in big league union politics is fairly well known. Not quite so well known is their connection with the milk business.

Tom Haggerty, Secretary of Local 753 Milkwagon Drivers of Chicago, has been a prominent figure

XUM

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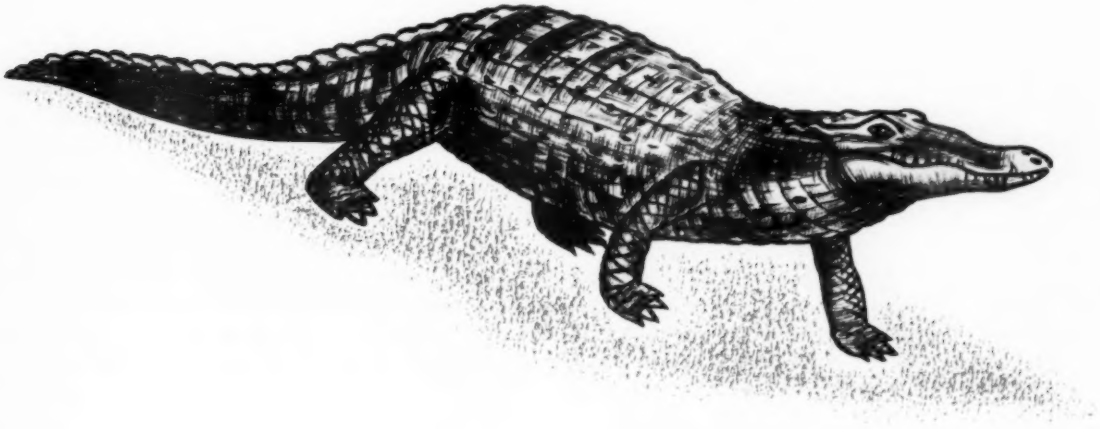

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in labor-management relations in the midwestern dairy industry for many years. In the recent teamsters election, he was a candidate for the presidency in opposition to James Hoffa.

Mr. Hoffa's election to the teamster's top job has been stopped short of fulfillment by a court order. The court order was secured by the famed "thirteen rank-and-file members." One of the militant thirteen was James Cunningham, an employee of Local Milk Products, Inc. of Maspeth, Queens, N. Y. Mr. Cunningham was back in the headlines briefly on November 21 when the New York Times reported "Foe of Hoffa Loses Milk Trucking Job." According to the Times story, Mr. Cunningham lost his job because of union activities. The implication was that the "heat" was put on the company and Mr. Cunningham's discharge was the result.

Information we have received contradicts this contention. Mr. Cunningham's activities as a dissenter in union politics, although undoubtedly requiring a lot of courage, also required a lot of time. For a period of nearly two months he was not able to devote much time to his route. It was for this reason the company found it necessary to hire a replacement.

Penicillin Kicks Up Rumpus in Upstate New York Markets

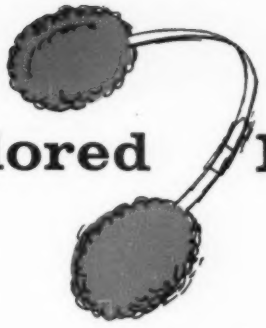
A report in the Binghamton Press of Binghamton, New York on penicillin in milk caused some alarm among consumers. The episode is a startling vindication of the warnings expressed by Mr. Herman Boland in the American Milk Review (AMR, Sept. 1957, p. 74).

The Binghamton situation developed when Dr. John P. Ayres, a veterinarian employed by the city, declared that the extensive use of penicillin by dairy farmers in treating milk cows was "contaminating" milk supplies to such a degree that "...it affects people who are allergic to penicillin—they are reacting to the milk itself."

Pointing out that farmers are required by law to discard all milk taken from a cow treated with penicillin for a period of 48 hours after the injection (72 hours in some cases—Ed.) Dr. Ayres declared "they aren't doing it."

According to milk distributors in Binghamton the story was placed in its proper perspective by the Health Department the following day. There was no noticeable effect on the consumption of milk although the subject was apparently a matter that was discussed among consumers. However, the situation was a delicate one that illustrates the potential danger of the problem.

The Chocolate Colored Ear Muffs



A story based on the true case history of a Kraft Chocolate Flavored Powder customer

Milwaukee's mean winter temperature of 23.9 degrees is plenty mean for chocolate milk sales. And Hannibal Hotblood, sales manager of Goodcream* Dairies, didn't like it one bit.

So he called up Charley, the salesman who supplied Kraft Chocolate Flavored Powder to Goodcream Dairies. (Charley also supplied on-the-spot technical assistance and solid merchandising and promotion ideas.)

"Charley," said Hannibal, "It's late October. The temperature is dropping in Milwaukee and so are Goodcream's chocolate milk sales."

"I'll be right up," Charley said.

And he paused only long enough to grab a handful of hot Kraft merchandising ideas to keep him warm on the way.

Half an hour after Charley and Hannibal got together, they'd worked out this promotion:

For Goodcream's wholesale routes, they planned displays featuring Goodcream's as a hot chocolate drink and tieing-in with Kraft miniature marshmallows in each store. In addition, Charley supplied dispensers that served hot chocolate for weekend demonstrations in key stores. And good hot chocolate it was! Goodcream's, like all Kraft Chocolate Flavored Powder Customers, made a rich chocolate milk flavored just the way local customers preferred it.

Retail routemen "set off" quarts of Goodcream's chocolate milk along with a sample bag of Kraft miniature marshmallows and a flyer supplied by Kraft.

A salesmen's "poker contest" was organized. For every quart of chocolate milk each salesman sold over his base, he drew a card for his poker hand. At the end of the promotion cash prizes were awarded for the best poker hands and for the most cards drawn.

Hannibal and his crew kept the promotion rolling through November and December. They knew they were doing well. (A royal flush beat out four aces in the salesmen's contest.)

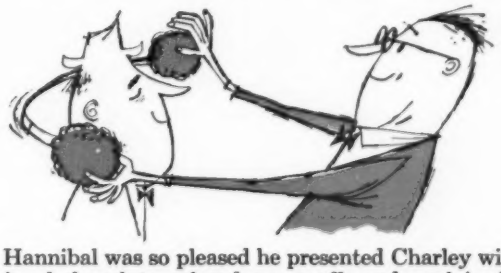
But it wasn't until a few months later that the figures were sorted out. They were amazing! Goodcream's comparison with the previous year's chocolate milk sales showed:

A 12% increase for their retail routes;

A 23% increase for their wholesale routes;

A whopping 45% increase in chocolate milk sales in the stores in which samples were offered.

And sales remained high even after the promotion.



Hannibal was so pleased he presented Charley with a pair of chocolate colored ear muffs and explained he wanted to see him in Milwaukee every winter.

Charley'll go, too!

Like Charley, all Kraft salesmen will brave any temperatures to help dairymen sell more chocolate milk. One will be glad to call and explain how Kraft's 3-point plan can help your business. Just write or phone your nearest Kraft branch or division today.

*Actual names on request.

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EDITORIAL

Federal Orders and Production Quotas

THE SUBJECT of production quotas in the dairy industry received a welcome review at the recent industry meetings in San Francisco. In a speech given before the Milk Industry Foundation, Herbert L. Forest, Chief of the Dairy Division of the USDA's Production and Marketing Administration, discussed the general elements of the question. We thought the speech was a good one primarily because the conclusion was more logical than popular.

Mr. Forest pointed out two aspects of the problem that must figure prominently in any evaluation of quotas. Quotas, to be effective, must have market-wide application and market-wide protection. The machinery of Federal Market Orders is an obvious instrument for the accomplishment of these objectives. Mr. Forest argued that Federal Orders, as authorized by existing legislation, were created to promote orderly marketing. They have neither the legal authority nor the organizational structure necessary to function as a price support mechanism.

The second idea that Mr. Forest advanced, and a very fundamental idea it is, holds that a profound agricultural revolution is changing the character of milk production. The natural trend is toward larger units which are a requisite if the efficiencies of dairy farm mechanization and herd improvement are to be realized. Quotas, Mr. Forest contends, would tend to freeze farmers at present levels of efficiency or inefficiency.

There are other parts to the question. There is certainly an administrative problem involved in the application of an inevitably complicated system of controls to an industry as extensive and involved as the milk business. There is certainly a legitimate question concerning the effectiveness of quotas with other agricultural commodities such as cotton and wheat.

However, these are more in the nature of technical problems, rather than basic philosophical concepts. The fundamental issue is, as Mr. Forest said, the impact of an agricultural revolution on milk production. He is to be commended for both his logic and his courage.

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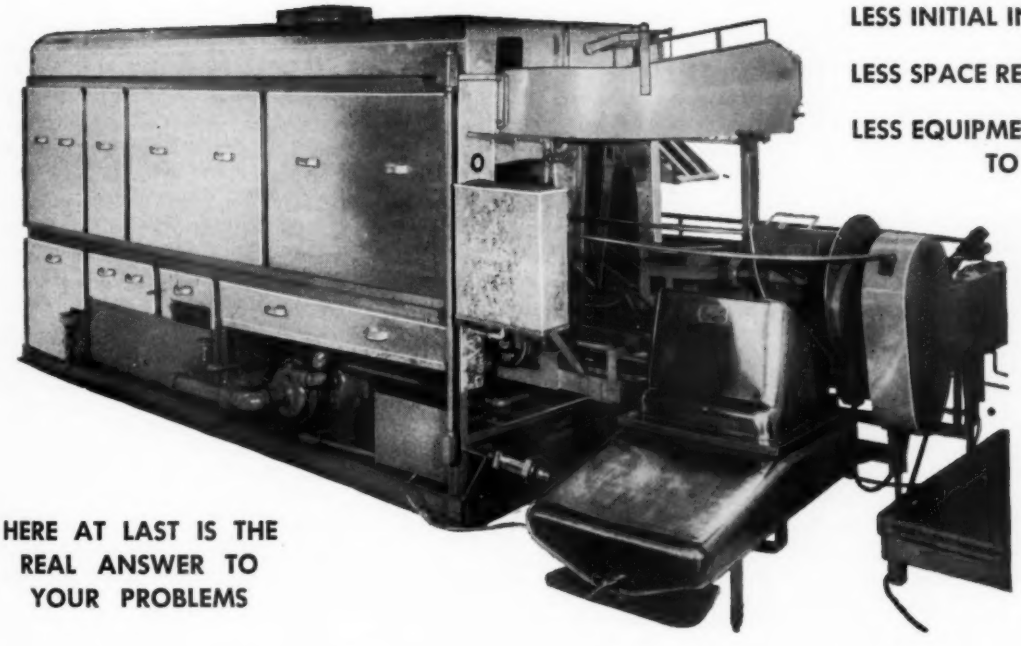

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THE POINT AT WHICH A COW'S MILK WILL FREEZE PROVIDES THE ANSWER TO THE QUESTION

Has Water Been Added to the Milk?

By D. H. KLEYN and W. F. SHIPE

THE FREEZING point of cow's milk is the least variable property of milk and consequently is of interest from both a practical and theoretical standpoint. Its practical value lies in the fact that it provides the most accurate means of detecting added water.[1]

In the case of milk (6), lactose accounts for about 54% of the freezing point depression, chlorides about 28%, and the remainder is due to other water soluble constituents. The fat has no effect and the influence of the proteins is negligible.

The official method of determining whether or not cow's milk has been adulterated by the addition of water was developed by Hortvet (9) in 1921. In 1923 the A.O.A.C. (10) adopted −0.550°C. as the standard average freezing point of milk and allowed a tolerance of 3% added water. In other words milk having a freezing point higher than −0.533°C. was considered illegal. Many investigators, particularly in recent years, have reported freezing points above this value for authentic samples of milk. The breed (2, 12, 17) ration and water intake (1, 17), season (4, 5, 14) and geographical location (7, 15), have been reported to influence the freezing point of milk.

In the latest research conducted at Cornell (11), studies were made on the effects of ration and time of feeding upon the freezing point of the milk. The results show that the difference between the freezing points of morning and evening milks was significantly larger ($P < 0.01$) for cows being fed at irregular intervals than for those being fed at uniform intervals, with the evening milk having the lower absolute freezing point.

In the years 1952-1955, there were 1,077 freezing point determinations run on milk samples using the semi-automatic cryoscope developed by Shipe, Dahlberg and Herrington (16). All of these observations were made by qualified analysts on samples of milk taken from individual cows in the Cornell herd. A total of 541 samples were obtained from morning milkings and 536 samples from evening milkings. The frequency distribution of the observed freezing points is shown in Table I and plotted on Figures I and II. The average freezing point of the A.M. milk samples is −0.537°C. and that of the P.M. milk samples is −0.544°C. The average freezing point of all 1,077 samples is −0.541°C. and the freezing points ranged from −0.513°C. to −0.571°C. The fact that a difference does exist between the freezing points of morning and evening milks from individual animals is in agreement with observations made by many other investigators (2, 4, 17). It has also been observed (18), as one would expect that a difference does also exist between the freezing points of morning and evening bulk herd milk. It is evident from these results that in order to establish the authentic freezing point average for an individual animal or herd, it will be necessary to obtain samples of both A.M. and P.M. milk.

This observation that the average freezing point of the 1,077 samples is below the average freezing point adopted by the A.O.A.C. in 1923 is in agreement with those made by Bailey (4) Stubbs and Elsdon (18) and Robertson (15). Other investigators (7, 13) in recent years have found this observation to be true with herd samples and market milk samples.

The data presented in this paper clearly show that the freezing point is not a constant, but that it does vary within relatively narrow limits. Since these values represent the freezing points of milk of individual cows, the variations are greater than would be

ABOUT THE AUTHORS

Dick Henry Kleyn was born in Heemstede, Netherlands on October 29, 1929 and attended public schools in Boardman, Ohio. He was enrolled at Youngstown University from 1947 to 1949. In 1950 he transferred to Ohio State University and received the degree of Bachelor of Science in Dairy Technology and a DISA Dairy Industry Research Fellowship in March, 1953.

Since his discharge from the Navy in October, 1954, he has been engaged in studies at Cornell University. His major subject has been Dairy Science and his minor subject has been Biochemistry. He is currently a candidate for the Ph.D.

This study has been prepared under the supervision of Dr. W. F. Shipe of Cornell's Department of Dairy Industry.

[1] **Some of the data contained in this paper are part of a thesis submitted by Mr. Kleyn to the Graduate School of Cornell University in partial fulfillment of the requirements for the degree of Master of Science.**

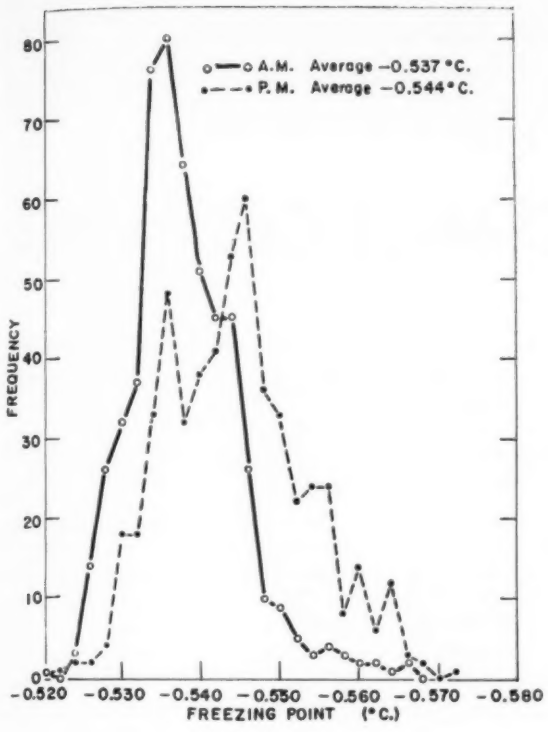
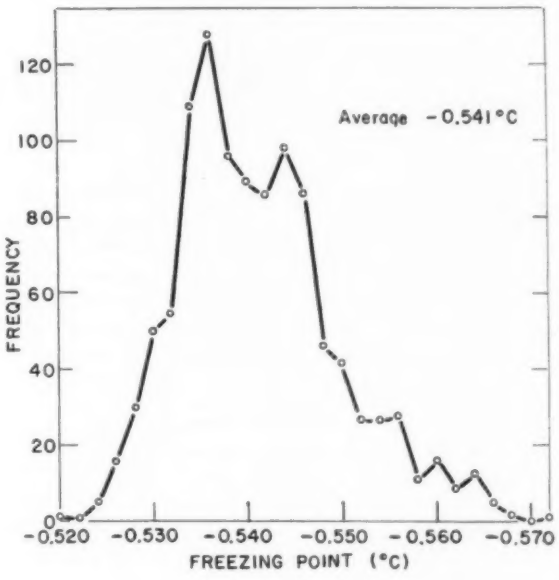


Fig. 1 (left): A comparison of the freezing point distribution of A.M. and P.M. milk samples.

Fig. 2 (below): The freezing point distribution of 1,077 milk samples (541 A.M. plus 536 P.M.).



expected for herd or bulk milk. In large milk supplies the variations would be considerably reduced, but they would not be completely eliminated unless all the milk with low freezing points were exactly offset by milk with high freezing points. In fact in a given herd the freezing points of the milk of all the cows may rise or fall together if some common factor is the cause. Of course the magnitude of the response of individual cows may be different.

In spite of the variations, the freezing point of milk is the most reliable index for detecting added water. The usefulness of the test is enhanced by recognizing the variability whereas ignoring it contributes to confusion.

Table I

THE FREQUENCY DISTRIBUTIONS OF THE FREEZING POINTS OF MILK FROM INDIVIDUAL COWS

Freezing-Point (—0. °C.)	*Morning Samples*	*Evening Samples*	*Total Samples*
513-520	1	1	2
521- 2	—	1	1
3- 4	3	2	5
5- 6	14	2	16
7- 8	26	4	30
9-530	32	18	50
531- 2	37	18	55
3- 4	76	33	109
5- 6	80	48	128
7- 8	64	32	96
9-540	51	38	89
541- 2	45	41	86
3- 4	45	53	98
5- 6	26	60	86
7- 8	10	36	46
9-550	9	33	42
551- 2	5	22	27
3- 4	3	24	27
5- 6	4	24	28
7- 8	3	8	11
9-560	2	14	16
561- 2	2	6	8
3- 4	1	12	13
5- 6	2	3	5
7- 8	—	2	2
9-570	—	—	—
571- 2	—	1	1
Average:	—0.537°C	—0.544°C	—0.541°C.
No. of Samples	541	536	1,077

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Diverse Industry Elements in the Twin Cities Have Cooperated to Create

A Quality Control Committee

HEALTH REGULATIONS relating to milk have been criticized with varying degrees of severity. Within recent years, as markets have expanded and intermarket shipments of milk grown in volume, the criticism has become stronger.

No doubt some of this criticism has been justified. There are often wide variations both in regulations and in the interpretation of regulations from one market to another. In some cases the differences are apparent even within very narrow geographical limits. Sometimes the variations in health requirements become barriers to trade. Sometimes they constitute irritating and what appear to be unnecessary restrictions. The problem is to provide adequate safeguards for the public health with a minimum distortion of dairy economics.

During the last 20 years, a system of quality control and health regulation has been developed in the Minneapolis-St. Paul market that shows what can be done when the problem is approached with the purpose of regulations clearly in mind.

Just before 1936 milk quality control in the Twin Cities was in a state of considerable confusion. Each plant dealt individually with the problem of milk quality. Some attempted to improve the quality, while others did nothing. In 1936, milk distributors were charged with a series of violations due principally to high bacterial counts in the finished products.

The health departments of St. Paul and Minneapolis agreed to forego legal action for a reasonable period of time if some form of systematic investigation of milk quality was initiated. Dr. Macy, who was at that time in charge of the Dairy Bacteriology Section of the Dairy Division, University of Minnesota, was instrumental in setting up a committee to investigate the problem.

The initial formal action came in 1936 at a meeting of representatives of 26 local distributors, the Twin City Milk Producers Association (the cooperative marketing association supplying raw milk to most of the distributors), the health departments of both Minneapolis and St. Paul, and Dr. Macy. As a result of this meeting, facilities were obtained in the Dairy Bacteriology laboratories of the University and an investigation of the milk supply and methods of improving it was begun. By the fall of 1937, it was decided that results were such that steps should be taken to establish

Fig. 1: Organizational chart showing committee membership and channels for the dissemination of information developed in the laboratory.

and a Quality Milk Supply

By W. C. Lawton,
Director of Laboratory,
Quality Control Committee

a permanent organization to continue the work. The first meeting of the organization was held January 3, 1938.

The committee at the present time is made up of representatives of the original participants and functions according to the organizational chart in Figure 1. The laboratory is financed by the milk distributors and the producers. The producers pay half the costs based on a charge per hundred pounds of milk sold as class I. Dealers pay the same rate per hundred pounds of milk handled.

The functions of the laboratory are along two main lines: (1) To sample and evaluate raw milk from individual producers and provide corrective helps or study that may be requested. (2) To sample and evaluate finished products and provide corrective help or study requested by a member plant. A third function of the laboratory is to engage in research that may be of use in evaluating or improving the service of the laboratory. Such research usually is conducted in cooperation with the University of Minnesota Dairy Department.

In the first category, the milk is checked for sediment, direct microscopic count and laboratory pasteurized count. The results obtained over the years 1945 to 1956 are shown in Figures 2 and 3 for direct microscopic and sediment test, respectively. The use of laboratory pasteurized counts was not instituted until 1949 so Figure 4 summarizes the results obtained over the period 1949 to 1956 for that test. All three figures show the same general trend, which is one of continued improvement. A low in all cases was reached in 1950 followed by an increase for the next two years but a decrease since that time. Counts in 1956 show very great improvement over 1945.

The laboratory makes the tests and provides the information necessary for corrective measures; however, little or no improvement can be made without an active field program to supplement the work of the laboratory. This field service is provided by the farmers themselves through their cooperative organization, the Twin City Milk Producers Association. To this organization should go a major share of the credit for the improvement noted over the years.

Cooperation with the field men was increased by the introduction of a new system of tests and reports in the summer of 1954. After the completion of regular tests by the laboratory, the results were mailed to the field men. In the event of a high count the field man called on the producer involved and mailed a report of his call to the laboratory. A retest of those producers was then made in the same month. This retest was entered on the producer's official record and entered into the computation to determine whether or not a producer would be shut-off until corrections were made. This type of procedure meant that a producer who had milk below the official standards got one test per month but a producer with milk above the standards got two tests in the

Fig. 2: **% Direct Microscopic Counts above 200,000.**

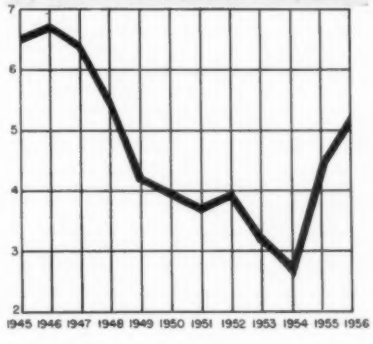


Fig. 3: **% Sediment Tests Dirty and Very Dirty.**

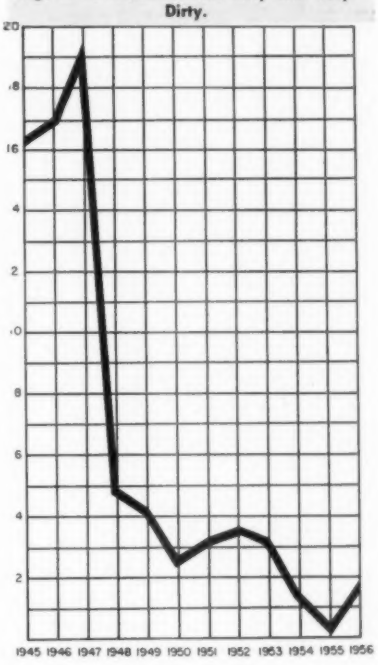
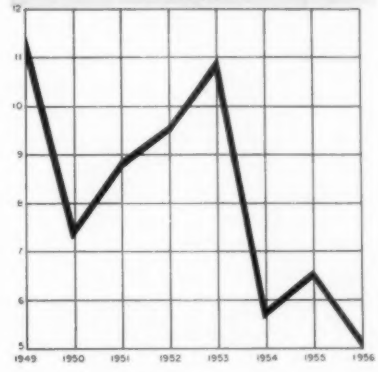
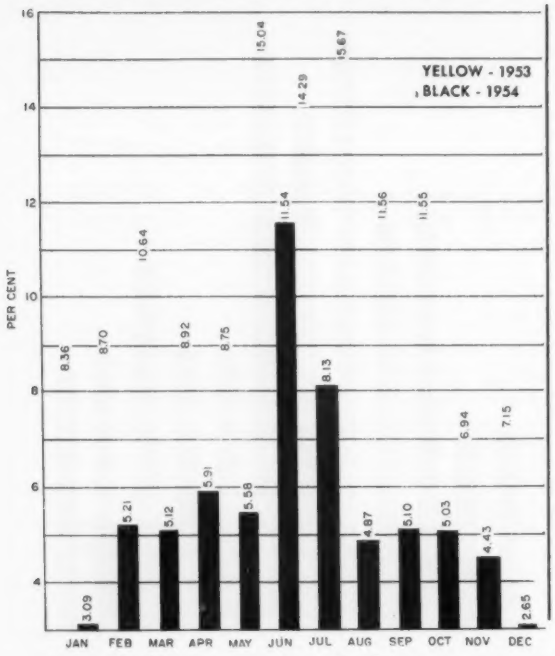


Fig. 4: **% Laboratory Pasteurized Count over 30,000.**



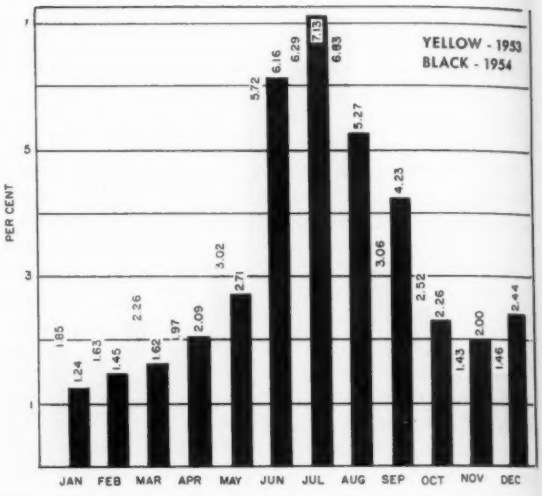
Raw milk from individual producers, tested in the laboratory for sediment and direct microscopic count, shows a continued improvement over a 12-year period. Laboratory pasteurized counts, started in 1949, show the same trend.

Fig. 5: **% Laboratory Pasteurized Count over 30,000.**



A considerable improvement in the laboratory pasteurized count in 1954 over 1953 is indicated in Fig. 5. June 1954 showed a high level, followed by a drop to a low level in August, continuing for the rest of the year. Results of the direct microscopic count (used for bacteriological evaluation), shown in Fig. 6, did not vary greatly in the two-year period.

Fig. 6: **% Direct Microscopic Count over 200,000.**



same month. The procedure achieved three significant results: (1) The laboratory was able to concentrate on those producers with lower quality milk; (2) Farmers were given an incentive to improve the quality; and (3) The health department was able to remove undesirable milk from the supply in a much shorter time. An indication of the effectiveness of this procedure can be seen from Figure 5 which shows the percentage of laboratory pasteurized samples above the legal maximum of 30,000/ml in 1953 as against those for 1954.

It is evident from this figure that counts in 1954 were considerably better than 1953. However, the most important point to be noted is the relative results from July to September in the two years. The results for 1953 indicated a high level was reached in June and remained high until about October, then dropped, probably due to the onset of cold weather. In contrast to this, 1954 showed a high level in June followed by an immediate drop until a low level was reached in August, continuing low for the balance of the year. The drop in July coincided with the increased emphasis being placed on field calls and the follow-up testing program. This variation from the previous year seemed to indicate that a successful program had been introduced. Of course the initial effect of any new procedure, good or bad, is often improvement but the sustained nature of this improvement would seem to exclude the "new-broom-sweeps-clean" effect.

W. C LAWTON

Dr. Lawton, author of this article, has served as director of laboratory of the Quality Control Committee since 1954. His long and varied experience enables him to speak authoritatively on the subject of milk quality control. Dr. Lawton holds B.S.A. and M.S.C. degrees from the University of Saskatchewan and a Ph.D. degree from Iowa State College. He is a member of the International Association of Milk and Food Sanitarians, the American Dairy Science Association and the Society of American Bacteriologists.

The sediment test has long been recognized as one of the most effective tests to improve poor milk supplies. The general use of farm strainers and better storage and handling of cans has greatly reduced the value of the test. However, it is still used extensively in this area. Figure 3 shows the results of sediment tests during the past 12 years and indicates that a distinct improvement has taken place since 1947. Continued testing and field work has reduced the number of unsatisfactory sediment tests to less than 2 per cent in 1956.

The direct microscopic count is used by the laboratory for the bacteriological evaluation of raw milk. An improvement in raw counts of milk over the past 12 years may be noted from Figure 2. The results of the direct microscopic count were not greatly changed by the introduction of the new testing program as indicated by Figure 6. The method was not sufficiently sensitive or accurate enough to reflect small changes in a short time. Factors of the microscopes were 500,000. Fifty fields were counted so that a change of one organism in the total number affected the count by 10,000, making accuracy poor. The number of high counts were low in the previous two years, consequently improvement was difficult to obtain.

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been nearly as dramatic as that on producer milk. However, a small but steady improvement has been made through the years and an increased emphasis on this phase of the work should tend to step up the improvement. Table 1 gives a summary of total counts and coliform counts over the past 12 years and shows that a large majority of samples had a low total count but that a rather high percentage of the samples had some coliform organisms present. Attention to the source of coliform contamination, and education of plant personnel in proper procedure to follow in correcting these sources is receiving attention at the present time and should result in improved results.

TABLE I

PERCENTAGE OF HIGH TOTAL COUNTS AND COLIFORM COUNTS GREATER THAN ONE PER ML. IN PASTEURIZED BOTTLED PRODUCTS

	Regular Milk		Premium Milk		Cream	
Year	% Total Count ►50,000	% Positive Coliform	% Total Count ►50,000	% Positive Coliform	% Total Count ►50,000	% Positive Coliform
1945	17.3	27.3	12.7	38.4		
1946	18.7	32.9	14.4	49.0	14.3	47.4
1947	13.1	26.1	12.8	38.7	17.9	51.4
1948	16.3	25.3	15.0	41.8	15.1	49.9
1949	5.8	31.6	6.8	41.6	7.9	48.1
1950	4.6	26.4	3.8	38.1	6.1	40.9
1951	5.0	25.7	3.4	44.5	5.4	44.2
	►30,000[1]		►30,000		►30,000	
1952	6.8	31.7	10.0	38.2	14.3	44.0
1953	11.7	21.7	11.0	26.4	13.4	34.2
1954	5.1	22.7	7.1	25.9	7.0	28.0
1955	5.3	24.2	—	—	6.3	28.2
1956	2.4	28.1	—	—	5.0	33.8

[1] Recording was changed at this point to comply with Grade A regulations.

The laboratory is in a very favorable position to undertake projects that will help in the improvement of quality in the market as a whole. A typical example took place in 1954. At that time the Twin City Milk Producers Association voted to convert all of their supply to the bulk handling system. The job of training and supervising all bulk milk haulers was undertaken by the laboratory. This provided an effective method of developing a uniform procedure as well as an opportunity to instruct drivers in proper sampling and milk handling techniques. This procedure has been very effective.

Another example of the uses made of the laboratory has taken place recently. The producers and health departments have been deeply interested in finding a suitable procedure and material for cleaning bulk tanks. The laboratory, in co-operation with the University of Minnesota, has undertaken a comprehensive survey of methods and materials of cleaning bulk tanks. The survey has not been completed but from information available a tentative procedure of cleaning has been formulated and will shortly go into practice.

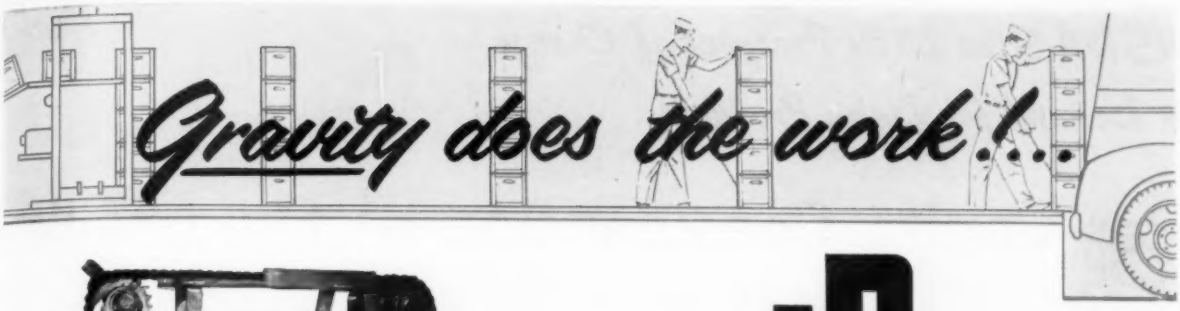
The success of this laboratory and the Quality Control Committee has, to a large extent, been dependent on the very fine support and cooperation of the members of the Dairy Department, University of Minnesota. In recognition of this cooperation, the Committee has made a yearly grant to the University. The grant amounted to $1,500 from 1948 to 1951 and has been $2,000 since then. In addition to financial aid, cooperation in research projects has done much to maintain close liaison between the laboratory and University of Minnesota. This sound relationship has provided an opportunity to study closely many phases of the market milk industry that might not have been possible for either group working alone.

The results outlined show that considerable improvement that has taken place in the milk supply of the Twin City area in the past 12 years. Such improvement has been uniform throughout the milk shed and has been brought about with a minimum of friction and at a very low cost. The main reason for the success of the project is covered by the one word, "cooperation." When one considers the varied interests involved – health departments, producers, dealers – it is pretty obvious that a great amount of patience and understanding was necessary to keep such a venture operating over the years. The fact that the group held together, the fact that progress was made, can be attributed to the understanding and foresight of those who represented the health department, the producers, the dealers and the University of Minnesota Dairy Department. The unbiased position of the University representatives has done much in mediating the many problems that have arisen over the years.

Summary

There are several factors necessary for the success of a cooperative venture such as outlined above. In summary they can be outlined as:

1. Health Department's approval of an outside laboratory doing official tests on which they must act to exclude undesirable milk from the market.
2. An understanding by dealers and producers that they should share in the cost of a quality program that will ultimately benefit them both.
3. A laboratory that is approved by the responsible state agency so all members will have confidence in its results. Also, it is essential that results be sent out promptly so improvements can be made in time to avoid official action. It must be remembered that the laboratory is working for the producers as well as the other members so should provide as good a service as possible.
4. A competent and active field force to use the laboratory results for improvement in quality and correction of improper practices. The field force is more effective if it is employed by the producers themselves as then there is no threat involved in a field call but rather a definite willingness to help an employer.
5. Periodic meetings of representatives of all members of the committee to discuss results and confer on any changes to be made or considered. Suggestions for improvements in the program and reports on research should be discussed.
6. Representation of the State University on the committee.
7. Cooperation.



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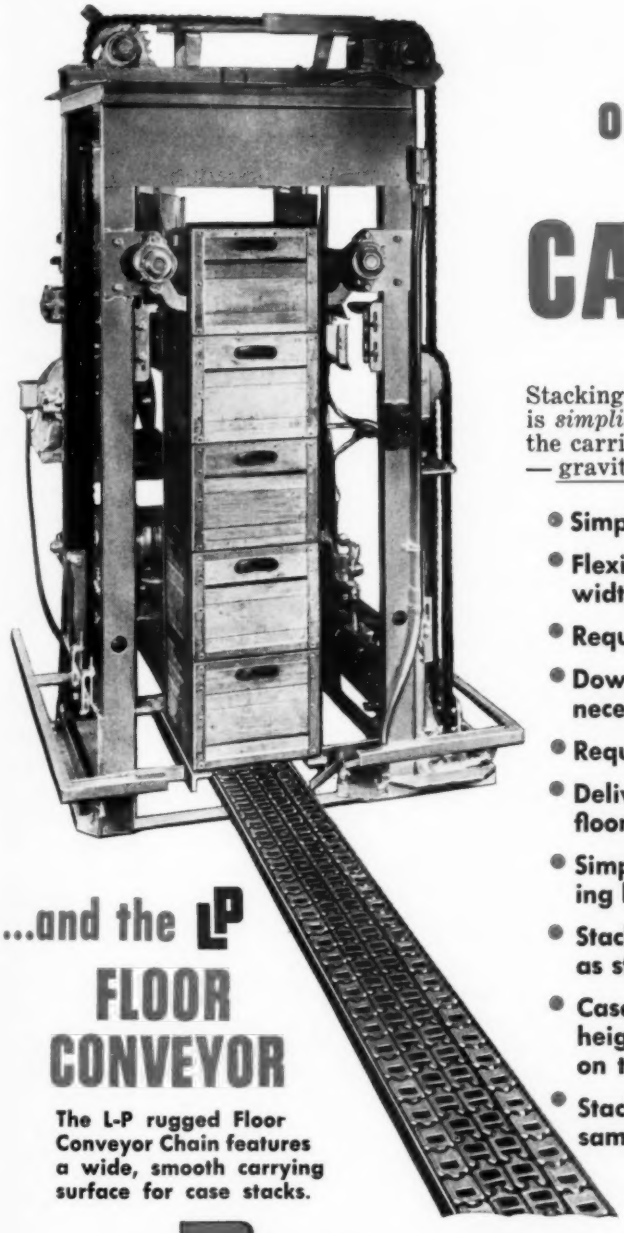

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USDA Sees Little Prospect of Change in Demand for Dairy Products

Per Capita Consumption of Fluid Milk Rises 4th Year in a Row

AGAIN IN PER CAPITA consumption of fluid milk and cottage cheese was not enough to offset a decline in the per capita consumption of all dairy products. The figure of 676 pounds is the lowest figure on record, according to figures just released by the United States Department of Agriculture.

The report, a magnificent collection of the best dairy industry statistics available, points out that the declining per capita consumption has been offset by an increasing population which has resulted in a generally expanded market. Highly significant, however, is the observation that 92.5 per cent of all the milk produced in the United States is consumed by civilians either in their homes or in institutions. Consequently any variation in consumer tastes or ability to buy has a large impact on the total demand for dairy products.

Ability of consumers to buy dairy products is not expected to diminish in 1958. Average disposable income per person in the United States was $1,760 in 1957, a whopping 16 per cent gain over 1952. The level is expected to continue through 1958. The report says, "With continued large consumer incomes next year, a decline is not likely in demand for dairy products. But recent relationships between changes in consumer incomes and changes in demand for dairy products as a group do not indicate a significant increase in demand for individual dairy items in 1958. For the next 3 to 5 years, continued changes in consumers' tastes and preferences may result in no increase in demand for dairy products, even if consumer incomes increase slightly each year."

One of the most striking facets of the income-consumption relationship is the fact that increases in income do not produce uniform increases in food consumption. The increases vary widely, even within the same food group. When income increases a family is likely to spend more for ice cream, for example, rather than increase its expenditures for fluid milk.

Burden on Advertising

The variable nature of expenditures for food as income increases, together with the clear probability of unstable preference patterns, suggests an intensified struggle for the customer's favor. When this is examined in relation to the growth of store buying where a much greater range of choice exists than is the case with home delivery, the need for influencing that choice through sound advertising and merchandising programs assumes added stature in an evaluation of the future.

A very significant trend revealed by the report is the unmistakable decline in the consumption of butterfat. Per capita consumption of butter has dropped by ten pounds from its high of 18.6 pounds in 1934. The use of cream has also declined considerably in the last ten years. The figure was 10.6 pounds per person in 1946, 7.5 pounds in 1956. A substantial part of this decline in the use of milkfat is due to the use of substitute fats. However, there has been a definite effort on the part of the American public to hold down the total intake of milkfat, presumably due to the emphasis on a slim figure as a feminine virtue plus the heavy inroads made by the much publicized but unfounded link between milkfat and heart disease.

In sharp contrast to the discouraging decline in the consumption of milkfat has been a strong growth in the demand for solids not fat. The total per capita use of the various items that fall into the non-fat category has risen to about 48 pounds. This is a gain of 10 pounds, approximately 25 per cent, over the averages of the 1920's and 1930's. This has not had much effect on the farm price structure. What really happened was a shift in the use of non-fat milk as feed for farm animals to its use as a human food. Reminds one of Samuel Johnson's famous definition of oats – "a grain that Scotchmen eat and Englishmen feed to their horses."

Fluid milk consumption showed a per capita gain for the fifth year in a row. From 1953 the figures read 300, 301, 305, 308 and an estimated 309 or 310 for 1957. Most of the figures one sees on this subject include fluid cream. As we pointed out earlier, fluid cream has been in a decline for a number of years. Because of this, the usual figure of fluid milk and cream combined shows a decline whereas there has actually been an increase in fluid milk consumption per person. The figures quoted above are for fluid milk only. The combined fluid milk and cream figure for 1956 was 355 pounds, 356 for 1957. However, to get an accurate picture of what is happening, we believe that the fluid milk figure alone is the most revealing.

To operators of fluid milk plants, the figure on cottage cheese is exceedingly instructive. We have noted a definite stir of interest in cottage cheese on a nationwide scale. We have remarked on this phenomenon in the pages of the *American Milk Review*. Better facilities and equipment for making cheese, better cheesemakers, improved quality and a vastly improved package and packaging machinery are characteristic of the trend. This is reflected in the statistics. The record is one of almost uninterrupted growth since 1917. The growth has been at an accelerating tempo since 1946. During the last decade, per

(Please Turn to Page 85)

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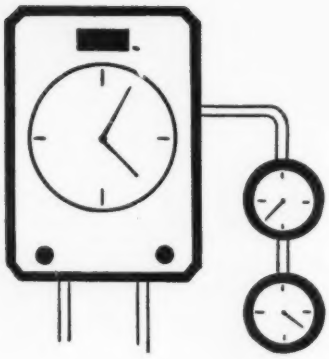

Industry Problems

By R. F. HOLLAND and J. C. WHITE

Bulk Pick-Up Costs Versus Can—How to Detect and Control Molds

QUESTION—How does the cost of operating a tank pick-up truck compare with the costs for an equivalent amount of can milk?
S. T.

ANSWER—It is obvious that a truck designed for bulk handling of milk will cost more than a can truck of the same capacity. The heavier chassis for a tank truck in common sizes will cost about 15 per cent more than the chassis for an equivalent can van and a tank of 110-150 can capacity will cost from $2,500 to $4,000 compared to a van body at $600-$850. Of course, larger capacity trucks are used in bulk and this extra investment represents a smaller proportion of the total investment.

Most reporting agencies say that the cost per mile ranges about the same or slightly more with tank handling but there are real savings resulting from load reorganization, hauling bigger payloads, and hauling more than one load daily.

Several reports state that the fixed cost per day is about 50 per cent greater with tank trucks. Operating costs per mile are larger in the larger capacity trucks and workers report as much as 5.8 cents per mile increased cost with bulk, but usually the costs are nearly the same. For the Midwest the costs reported for bulk and can trucks are 9¼ cents and 8½ cents per mile respectively, while the Northeast, with generally higher trucking costs, reports 11¼ cents and 10¾ cents. Operating costs are lower with larger milk volumes per mile travelled and per man hour of route time.

The bulk tanker has the advantage of a 10 per cent greater net payload. Two hundred and fifty empty cans weigh 6,750 pounds compared with 4,500 pounds for a 2,500-gallon truck tank. The difference, 2,250 pounds, represents about one-tenth the weight of 2,500 gallons of milk. These calculations ignore the weight of the van truck body and would be further swayed in favor of the bulk tank were we to consider the effect of partially filled cans as a reducing factor in the ratio of payload to can weight.

The costs will be greatly affected by milk volume and mileage per load. Total costs for bulk handling decrease rapidly as volume rises and mileage drops, but can trucks are little affected after modest changes have been made. For instance, the Washington workers report that average costs for collecting, hauling and receiving full loads were 1.13 per cwt. for can milk and 1.03 for bulk when the individual delivery was 100 pounds per day. At higher delivery rates, 500 pounds per farm, the costs were 45 cents for can and 29 cents for bulk, but at 800 pounds per farm, can costs were still 43 cents but bulk costs had dropped to 24 cents. This shows in part the need for large producers in bulk routes.

There is an excellent discussion of factors involved in trucking costs and a fairly complete bibliography in the U.S.D.A. Marketing Research Report No. 190, entitled "How Bulk Assembly Changes Milk Marketing Costs."

It is reasonable to say that bulk tanks are initially more expensive; they cost approximately as much to run as can trucks but they will haul milk more economically if they are properly used.

QUESTION—What types of molds are commonly found in milk plants and how can they be controlled?
Ohio

ANSWER—As you are undoubtedly aware, molds are multi-celled fungi

> Dr. Robert F. Holland and Dr. James C. White have been contributing to the American Milk Review for many years. Both are members of the Dairy Department at Cornell University where they have built splendid reputations as teachers, scientists, and friends of the dairy industry. They will welcome your questions on plant problems. Please address them to either Dr. Holland or Dr. White at Stocking Hall, Cornell University, Ithaca, New York.

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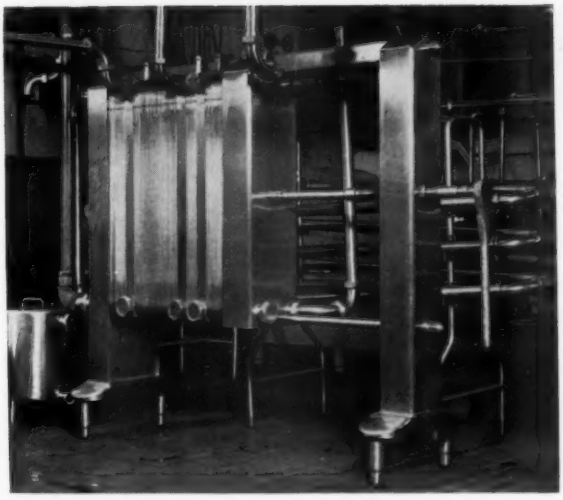

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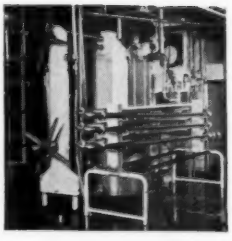

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that reproduce by spores. They produce long filaments called mycelia as they grow. The spores are produced in very large numbers at the ends of the filaments, and, since they are extremely small and light, they are readily distributed by air currents.

As a result, molds are very widespread and need only the proper environment providing food, water, and a desirable temperature to grow.

Most of the molds with which we are familiar will grow only when they have ample supplies of air. Therefore, we find them on walls and ceilings and on the surfaces of dairy products and equipment.

Molds appear in a variety of colors, such as white, green, black, and pink. It is not uncommon to see them growing side by side on food products that have been contaminated by them. Molds produce enzymes of various types which break down food products. Some molds are used in the ripening of cheese, such as Camembert and Roquefort. Milkfat and protein are broken by the enzymes produced.

One of the most common molds found in dairy plants is *Oospora lactis*, a white milk mold. It will grow rapidly on cottage cheese, cream cheese, and similar products, causing the surfaces to become slimy. This mold will not cause illness but will quickly ruin the flavor and appearance of the dairy products upon which it is growing.

Mold spores in milk, cream, etc., may be destroyed by proper pasteurization. Boiling water will also destroy them on dairy equipment as will other dairy sanitizers.

If walls and shelves are to be disinfected, a dilute solution of formaldehyde, ½ ounce per gallon of water, may be used for washing them. It is not uncommon to find molds growing on painted surfaces. Most of the large paint companies now manufacture paints that contain mold inhibitors. These appear to be quite satisfactory.

Butter wrapper parchments may be dipped in a 10 per cent solution of a mixture of 60 per cent calcium propionate and 40 per cent sodium propionate.

It is advisable that rooms be kept dry and well ventilated if mold problems are to be kept at a minimum.

BOILER LANGUAGE

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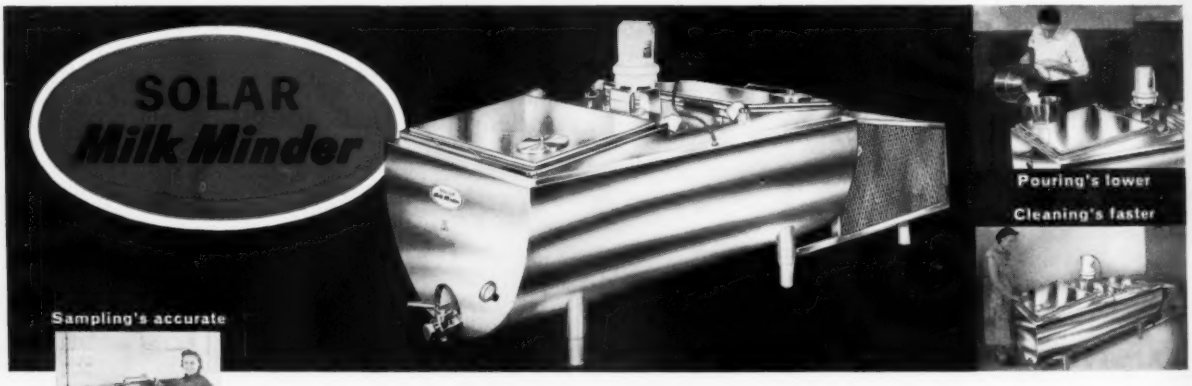

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Joppe's Dairy in Michigan

Operates Money-Making Cheese Shop

By PHILIP BRENTON

JOHN G. JOPPE, plant superintendent of Joppe's Dairy, Grand Rapids, Michigan, is more than satisfied with the progress of a cheese shop started on the company's premises in 1952. "It has shown a constant and steady increase in sales since we started it," he says. Furthermore, the cheese shop is a long way from operating at peak capacity.

Housed in the company's dairy store and soda fountain area, the shop began as a single small display case containing a few kinds of domestic cheese. This inventory later was augmented by items purchased from representatives of importers and from other salesmen in the trade. Display space steadily increased to accommodate added merchandise. Although domestic cheese constitutes the bulk of sales, there's a growing demand for imported cheeses.

The cheese shop fits in ideally with the dairy operation. The dairy store and fountain were maintained not so much as money makers as they were for good will builders for the fluid milk home delivery business. Mr. Joppe felt that a cheese shop would attract customers that the dairy store and fountain did not. Once in the store a percentage of the cheese customers would be attracted to the dairy store and fountain and perhaps to the home delivery service. The cheese shop, it was felt, would also win customers from the fountain and dairy store.

Special favorable circumstances helped the cheese shop along. First, the store was already there and the help was already there. The same sales people that take care of the dairy store and fountain also sell the cheese. The books show the cheese shop charged with its share of the sales cost.

High Profit Item

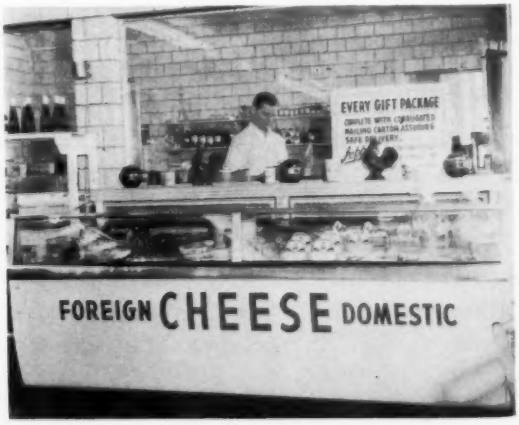
Mr. Joppe also likes the fact that it's a high-profit item. Another favorable circumstance is that the plant happens to be on a main street, heavily travelled by people on foot and in automobiles. Joppe's exploits this natural advantage with a sign conspicuously placed on the store front. In addition the firm takes newspaper ads regularly pushing a cheese "special of the week." This is a "loss leader" or "price leader," designed to bring people into the store and to compete with the grocery stores, the major opposition. The Joppe ads try to show that the cheese shop offers a more varied selection and higher quality of foreign and domestic cheeses.

Competition is not the only problem in the retailing of cheese. The beginner must be wary of over-enthusiasm. Says Mr. Joppe, "We have given some of my buying mistakes to charitable institutions because the public did not share my feelings about them. A good rule is to buy a small quantity first of an unknown item. If it goes over, you can get more."

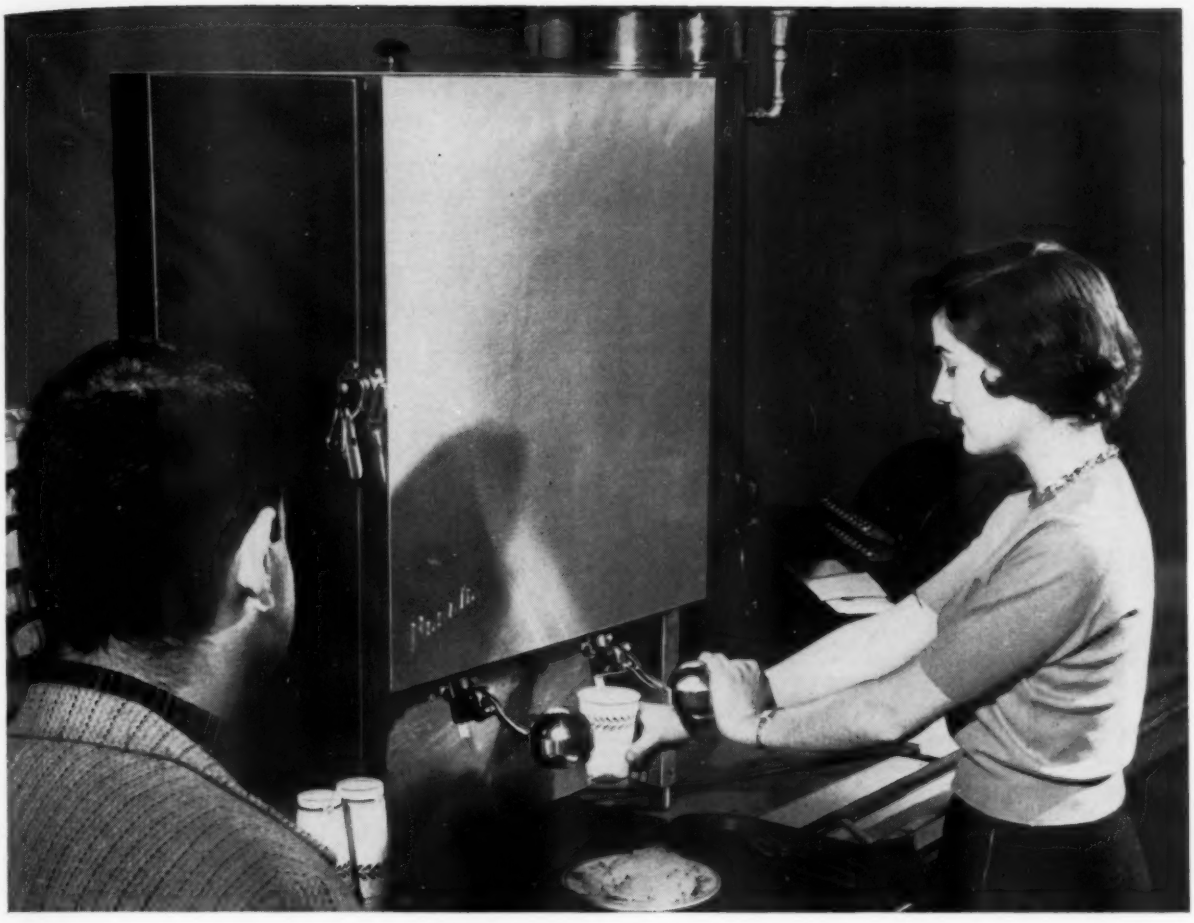
He found that sales persons are most important. They have to know something about the products and have a deep interest in them. Customer education plays a vital part in the cheese business. Competent sales persons are essential for this phase.

Mr. Joppe sums up, "When you open a cheese shop you are not entering a field where there are no competitors. However, when you get built up to where you carry a really large selection you find that there is very little competition because you are getting into an undeveloped field of retailing. We feel that we have only scratched the surface when you consider the potential demand that is still there to be exploited."

Joppe's Cheese Shop enjoys a windfall advantage of being on the premises of a dairy plant that happens to be on the heavily-travelled main thoroughfare of Grand Rapids.



Visible from in front of the cheese display cabinet is the dairy's laboratory, inspiring further customer confidence in the products sold by the dairy.



"I don't see how you can operate a cafeteria without milk dispensers,"

says **E. E. PYLE,** *National Food Management Service*

Mr. Pyle manages the Duquesne University cafeteria, in Pittsburgh, Pa., for National Food Management Service, a subsidiary of Bickford's, Inc. He says, "I don't see how you could operate without milk dispensers. They eliminate individual containers and all the labor that goes with them.

"Our milk is always fresh and cold, and the students like the better flavor. The dispenser is easy to service, and it sure helps us to sell a lot of milk."

National Food Management Service has found that dispensers are definitely more profitable and easier to handle where volume milk sales exist.

You'll see these gleaming Stainless Steel milk dispensers in cafeterias and restaurants all over the country. They help sell more milk, better milk, at less cost, with less work than any other method. For information, write to United States Steel, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

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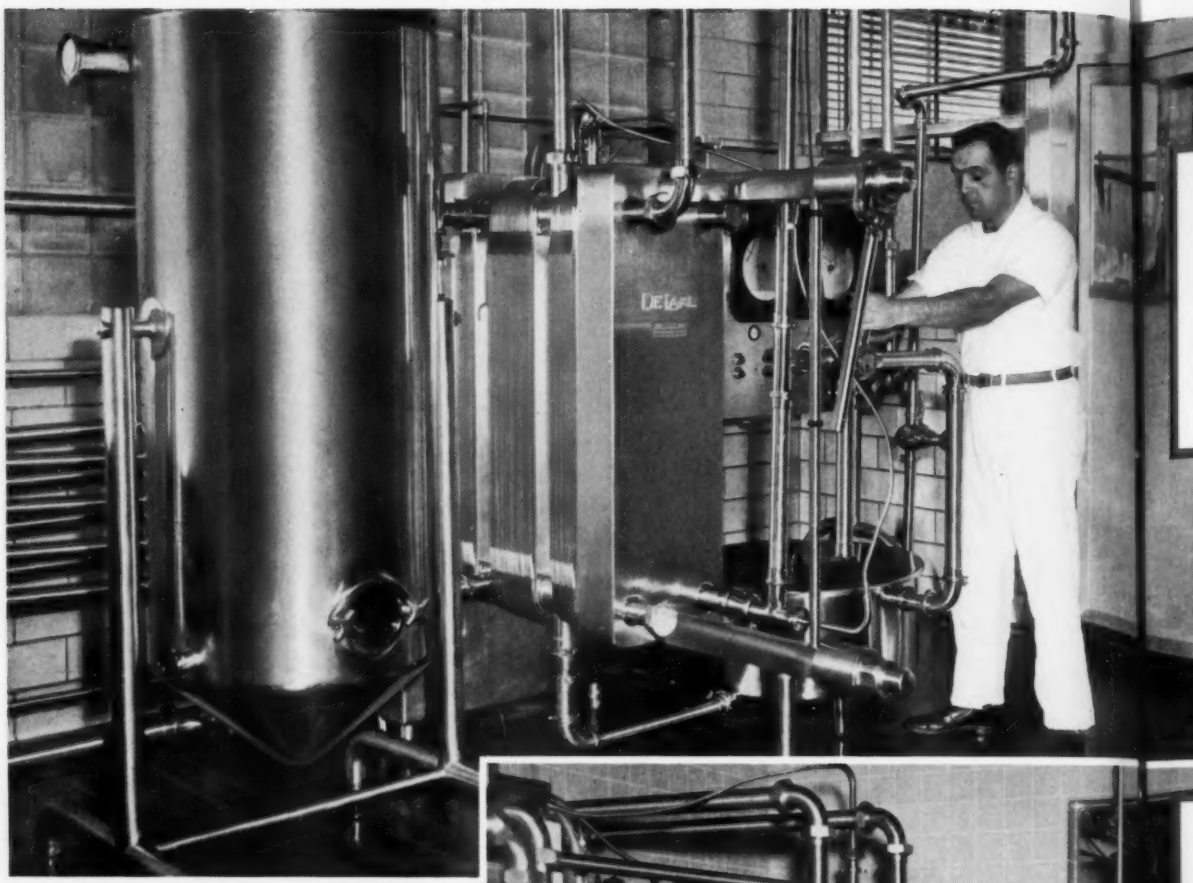
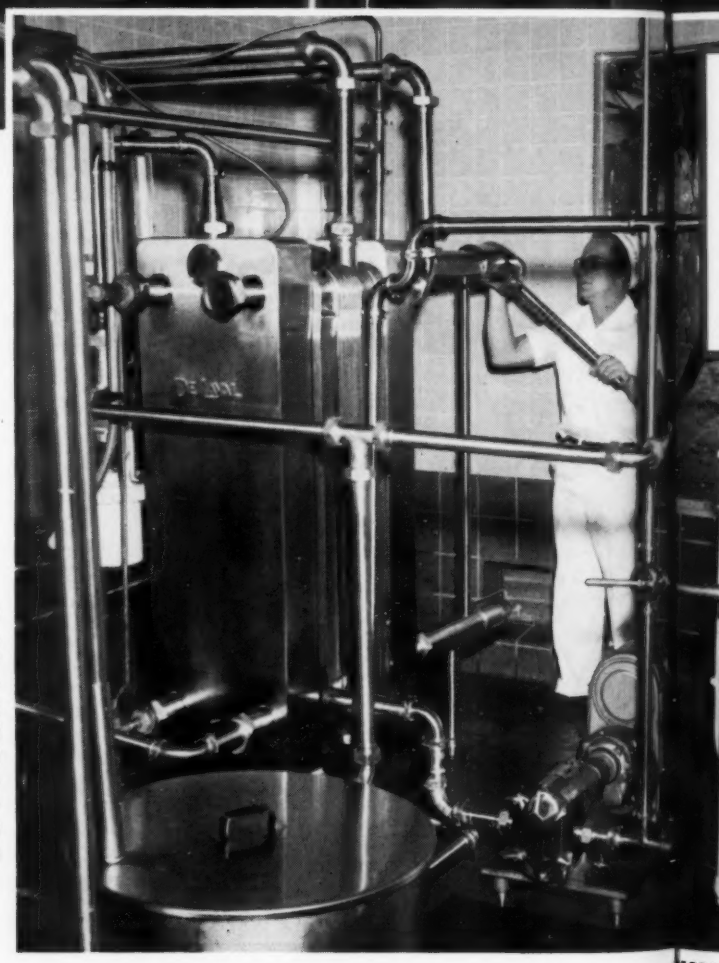


● Now you can eliminate loss through off-flavor and feed odors in milk or milk products... no matter what the size of your plant! The new De Laval "Vacu-Therm" restores pure milk flavor, thoroughly removes off-flavors by the effective use of heat and vacuum. Uniquely designed, the De Laval "Vacu-Therm" prevents milk dilution, provides an opportunity to insure against product losses. In addition, the De Laval "Vacu-Therm" can be completely cleaned by circulation without disassembly. Get all the profit-making facts about the new De Laval "Vacu-Therm"... today!



● De Laval is first choice in HT-ST Pasteurizers ... because De Laval offers unsurpassed precision, instant temperature control without "seeking" or time lag ... which means positive product protection. And De Laval Plate Heat Exchanger equipment requires a minimum of steam, refrigeration and water, needs less attention ... which means much lower operating cost. De Laval offers many exclusive features ... easy installation ... efficient cleaning by circulation ... heavy stainless plates with field replaceable gaskets ... everything that adds up to **first in the field!**

DE LAVAL VACU-THERM MEANS PROFITS!

"DE LAVAL is the answer to seasonal flavor problems... improves our keeping qualities ... all surfaces easily cleaned."

—George F. Braley, Jr., Braley's Creamery, Inc., New Bedford, Mass.

DE LAVAL HT-ST PASTEURIZER MEANS PROFITS!

"DE LAVAL saves hours in processing and wash-up time...we are using one less man in the plant... fuel consumption reduced 250 gallons of oil per week."

—Frank Inderkum, Inderkum's Dairy, Sacramento, Calif.

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XUM

Flavor Control Systems Have Proved to Be of Great Value to the Dairy Industry. Here Is a Detailed Study of the Equipment

The Practical Application of Steam Injection Systems to Fluid Milk and Cream Operations

By W. M. ROBERTS

W. M. Roberts is head of the Dairy Department at North Carolina State College. One of his most significant contributions to the dairy industry in his region has been his extensive and productive efforts to find adequate controls for off flavors caused by weed and feeds.

FEED AND WEED flavors in milk are expensive. They cost the plant in reduced sales and extra expense in handling. The producer loses through sale of milk in lower classifications, lost or rejected milk and higher feed costs. A portion of the loss in sales can be controlled by a careful and rigid program of grading milk on the platform. The farmer can do much to reduce the problem by feeding and management practices on the farm. Since these methods are so costly and seldom result in completely satisfactory results, it seemed that other approaches should be investigated to improve the condition.

The principal feed flavors in milk that have caused trouble are wild onion or garlic, ladino clover, rye, orchard grass, fescue, corn silage, grass silage, bitterweed and stinkweed. Some of these are obnoxious weeds; some of them are the most economical feeds that can be fed to dairy cows. The magnitude of the problem varies by geographic areas but season and climate, type and quality of the pasture and feeds, feeding and management practices are fundamental regardless of location.

Very little is known about the chemical nature of the substances in feeds that impart an off-flavor to the milk when they are eaten by cows. The characteristic flavors associated with the various feeds suggest that many different chemical compounds are involved. The complexity of the problem is shown by some unpublished research at North Carolina State College. Approximately two tons (4,000 lbs.) of a mixture of wild garlic and wild onion were steam distilled. Four fractions were obtained: Fraction No. 1, 89.6° to 104.0° F.; Fraction No. 2, 149.0° to 158.0°F.; Fraction No. 3, 185.0° to 194.0° F.; and Fraction No. 4, 212.0° F. Fraction No. 1 constituted about 12 per cent of the distillate. Fraction No. 2 approximately 3 per cent and Fraction Nos. 3 and 4 about 80 per cent.These fractions were combined and analyzed by a mass spectrometer. it was estimated that the distillate contained at least 12 different chemical compounds composed primarily of disulfides and mercaptaus. since this is true for the wild garlic and onion, one may get an idea of the complexity of the problem when he contemplates all of the compounds that must be dealt with in the different feeds consumed by cows.

Generally, the flavor substances are present in very small quantities. Their relative solubility in butterfat and water and their boiling point are usually not known.

The factors that must be considered in removing feed flavors from milk and dairy products are (1) chemical nature and concentration of the flavor producing substance(s) (boiling point and relative solubility), (2) temperature, steam and vacuum treatment and (3) time. Substances with low boiling points can be volatilized easily. Oftentimes, prolonged exposure to vacuum at 161° F. is all of the treatment that is needed. As the concentration of the flavor increases it becomes more difficult to remove. The creation of "flash" steam will improve the effectiveness of the equipment. The amount of "flash" steam created is dependent upon the temperature drop in the vacuum chamber. When the product is heated by a heat exchanger, there will be a concentration of the milk if the temperature is reduced by vacuum by an amount that is more than the radiation losses. Some effort has been made to condense the vapors from the flash steam in the second chamber into the first chamber of the vacuum equipment. The extent to which this system replaces the water that is evaporated has not been definitely established (5).

When live steam is used for raising the temperature of the milk, the amount condensed in heating is evaporated as "flash" steam with the result that concentration can be controlled. Generally, it is believed that higher temperatures can be obtained with live steam without danger of a cooked flavor than with heat exchangers. These higher temperatures permit more "flashing" of steam and thus

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See The Perry Como Show on NBC-TV

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Two on Milk—Jan. 4 and 18; two on Butter—Jan. 4 and 18. Audience is 15 million homes—45 million persons.

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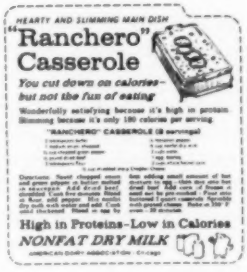
Low calorie recipe ads build interest in Nonfat Dry Milk. There'll be an ad every month in Good Housekeeping, going to almost 4 million homes. Series includes main dishes, salads, desserts.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High in Proteins–Low in Calories
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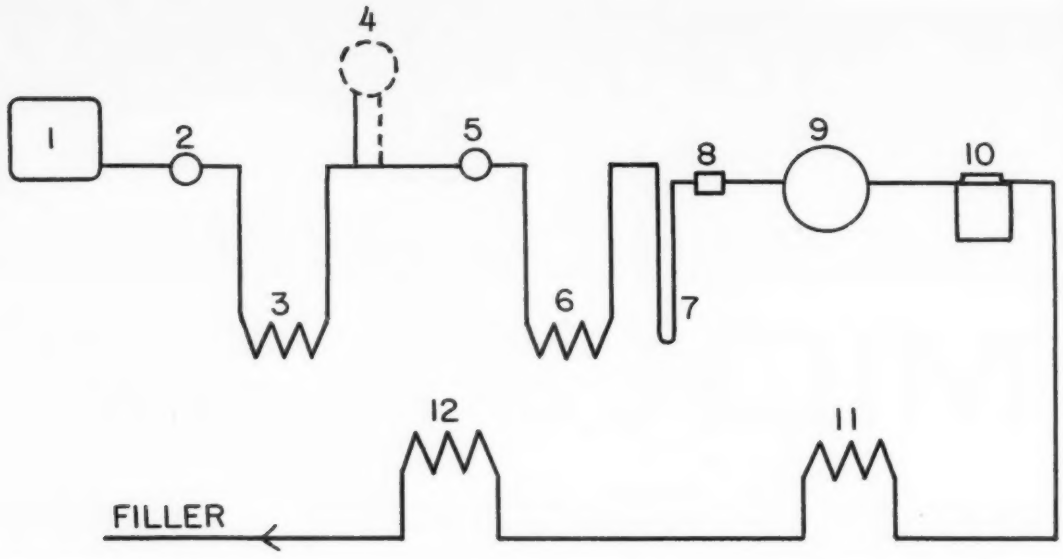


Diagrammatic Sketch of Layout Using Type I Flavor Standardizers

Legend Item 1. Raw milk storage, 2. Balance tank, 3. Regenerative heater, 4. Vacuum chamber one, 5. Positive pump, 6. Plate heater, 7. Holding tube, 8. Flow diversion valve, 9. Vacuum chamber two, 10. Homogenizer, 11. Regenerative cooler, 12. Plate cooler.

When chamber one (item 4) is used, it removes primarily air and undissolved gasses. Most of the feed flavors are removed in chamber two (item 9). Treatment intensity is varied by altering the temperature of the milk coming from the H.T.S.T. as it goes to chamber two.

more treatment. It is believed also that water vapor has more carrying capacity than air. This is important because some flavor compounds are soluble in water vapor. Therefore, when a flavor has a high boiling point, it is expedient to control the temperature at a high level (195°-205° F.) and bubble excess steam through it to reduce the flavor intensity to a low level. Other advantages of steam appear to result from the dilution effect during treatment and from atomizing and dispersing effects that expose more surface for evaporation.

A further discussion of the principles of taint removal is found in the excellent papers published in the Journal of Dairy Research by Scott (9, 10, 11, 12, 13) and the reviews by McDowall (6) and Hunziker (4).

Development in Equipment

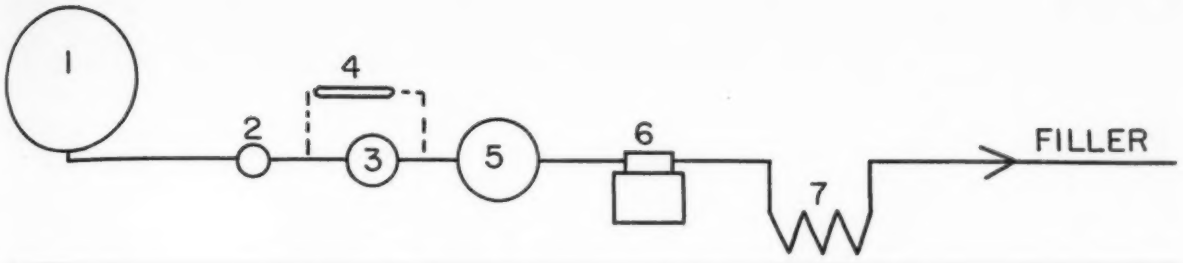
Considerable research effort has been put forth for many years to produce equipment that would volatilize or remove flavors from milk. It was learned early that agitation of milk, exposure of milk to surface cooler aeration, raising the lids of vats during pasteurization and opening the covers on coolers seemed to give a small improvement in the flavor.

About 40 years ago, Ayers and Johnson (2) reduced the intensity of onion flavor by blowing air through milk. Hunziker (4) experimented with the blowing of air through flash-pasteurized cream. Later he developed a machine in cooperation with the Pfaudler Company whereby the treatment was accomplished by injecting heated air into a vacuum pan. The combination of air, heat and vacuum expedited the removal of off-flavors.

Additional experiments demonstrated that steam injection was more efficient in expelling the off-flavors than the heated air. Many machines were developed using the steam-injection and vacuum treatments for removing feed and weed flavors from cream for buttermaking. Some of the machines were tested on ice cream mixes in the 1940's and proved successful.

Experiments were begun in 1951 at N. C. State College to adopt the Vacreator for the removal of feed flavors in fluid milk products. In 1954, the U. S. Public Health Service approved the Vacreator as a means of pasteurization for all dairy products. Its approval was based on the work of Tracy, Gedrick and Lingle (13) and Speck, Grosche, Lucas and Hankin (14) who found that 191.5° F. in the first chamber of the Vacreator was equivalent to 155° F. for 30 minutes for ice cream mixes. Since 1954, several manufacturers have developed equipment for use in removing volatile off-flavors in fluid milk products.

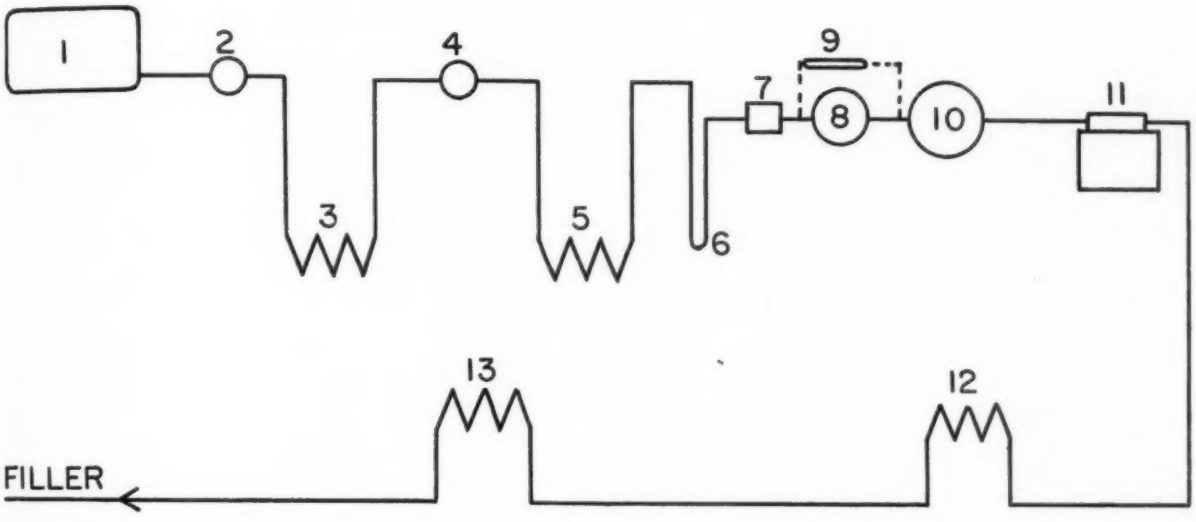
There are three types of flavor removal equipment that have received the greatest acceptance. Only the broad principles will be mentioned in this discussion. In Type 1, no direct injection of live steam is used and pasteurization does not occur. The raw milk is drawn by vacuum from the balance tank through the regenerative section of a plate heat exchanger and heated to approximately 138° F. From the regenerator, the milk goes to the first vacuum chamber where air and non-condensible gases are removed. No boiling occurs. The milk is pumped from the first vacuum chamber through the heating section of the plate heat exchanger, the holding tube and flow diversion valve into the second vacuum chamber. The temperature is raised from 162° F. to any temperature up to 200° F. in the plate heat exchanger depending on the treatment desired. The milk enters the second chamber tangentially and flashes immediately with the volatile flavors being removed by flash steam and vacuum. After final exposure, the pasteurized milk goes through the regenerative and cooling sections of the exchanger and is ready for packaging.



Diagrammatic Sketch of Layout for Vat Pasteurization

Legend Item 1. Vat Pasteurizer, 2. Pump, 3. Vacuum chamber one, 4. Steam heater. 5. Vacuum chamber two, 6. Homogenizer, 7. Plate cooler.

Either a vacuum chamber (item 3) or a steam injection heater (item 4) may be used. Sufficient vacuum is needed in chamber two so that dilution does not occur.



Diagrammatic Sketch of Layout Using Type II Flavor Standardizers

Legend Item 1. Raw milk storage, 2. Balance tank, 3. Regenerative heater, 4. Positive pump, 5. Plate heater, 6. Holding tube, 7. Flow diversion valve, 8. Vacuum chamber one, 9. Steam heater, 10. Vacuum chamber two, 11. Homogenizer, 12. Regenerative cooler, 13. Plate cooler.

Chamber one (item 8) or a steam injection heater (item 9) is used for the injection of live steam and raising the temperature of the milk from 180° F. to 195° F. depending on the treatment desired. In chamber two, the flavors are removed by vacuum and flash steam and the temperature of the milk is reduced to 155° F. to 160° F.

A Type III layout would be about the same as the Type II unless the flavor standardizer is used as a pasteurizer. In that case, the holding tube and flow diversion valve would be omitted and other controls added to the standardizer.

A series of spray pans is located in the first chamber of some of the equipment to prolong the exposure period and allow more time for treatment. The steam vapors from the second chamber are passed through the first chamber where some condensation occurs. This replaces some of the water lost during flashing. Some manufacturers are recommending the use of one chamber for flavor removal. Where one chamber is installed, it usually functions similarly to the second chamber discussed above.

Several manufacturers have produced machines that may be classed as Type II. The Type II machines can use limited direct steam injection (sufficient steam to raise the product to approximately 195° F.) but do not pasteurize. They are usually tied in with conventional H.T.S.T. pasteurizers. The pasteurized milk is discharged from the flow diversion valve at 162°-165° F. into the first vacuum chamber. If additional treatment is desired, then live steam is added and the temperature raised to 195° F. or some intermediate temperature. The milk is drawn by vacuum into the second chamber where more boiling occurs and the temperature is dropped to about that at which it enters the first chamber. The milk is atomized or sprayed into the first chamber and enters tangentially into the second one. A centrifugal pump removes the milk from the final chamber and sends it through the heat exchanger for cooling. Plate heat exchangers are equipped with vacuum pumps and used as condensers. A modification of these Type II machines has been developed whereby a steam heating tube and a single vacuum chamber are used. The dairy product is heated to the desired temperature by live steam in a stainless steel tube

and the mixture released under vacuum.

The Type III machine permits the use of a considerable excess of steam for treatment and can be used as a pasteurizer. Where other means of pasteurization are desired, it can be connected into positions with H.T.S.T. pasteurizers similar to the Type II machines. Where it is used as a pasteurizer, the usual arrangement is to have a plate heat exchanger that has heating, cooling and regenerating sections for heating and cooling. The raw milk enters the first chamber at approximately 140° F. and must be heated with live steam to at least 194° F. (minimum requirements of U.S.P.H.S. for pasteurization). Controls permit the maintenance of this temperature while additional quantities of steam are added. The product is discharged by vacuum into second and third chambers where additional flavor removal and cooling occur. Final cooling is done in the plate heat exchanger.

TABLE 1.

*Effect of Vacreation, Separating Procedure, and Product Used for Standardizing, on Physical Characteristics of Cream Prepared from Milk Separated by a Cold Milk Separator.***

Treatment	Fat Percent	Product Used For Standardization	Viscosity Minutes	Whipping Time Minutes	Feathering Ml. N/10 HCl	Cream Plug	Serum Layer
Sep. raw milk, standardized and vacreated cream	35	Skim Milk	4.85	2.03	1.7	0	0
Sep. vacreated milk, standardized	35	Skim Milk	3.03	4.50	1.5	0	0
Sep. vacreated milk, standardized and vacreated cream	35	Skim Milk	2.71	6.05	1.5	3*	0
Sep. raw milk, standardized and vacreated cream	20	Homogenized	1.59	.....	1.5	0	0
Sep. raw milk, standardized and vacreated cream	20	Skim Milk	1.48	.....	1.5	0	0
Sep. vacreated milk, and standardized	20	Homogenized	1.65	.....	1.5	0	0
Sep. vacreated milk, and standardized	20	Skim Milk	1.45	.....	1.5	0	0
Sep. vacreated milk, standardized and vacreated cream	20	Homogenized	1.41	.....	1.5	3*	0
Sep. vacreated milk, standardized and vacreated cream	20	Skim Milk	1.39	.....	1.5	3*	0

*Not saleable.
**Taken from data in reference (8)

Steam Supply

When live steam is injected directly into the milk product for heating and flavor removal, it must be free of any compounds that will contribute flavors or endanger health. It should be free of rust, relatively dry, and low in superheat.

The water that is available in most areas has to undergo some treatment before it can be used in a boiler. The nature and extent of the treatment will depend upon the character of the water. The practice followed by most dairy plants is to add certain types of chemicals to the boiler feed water. Most of these soften the water and prevent scale formation. Generally, the chemicals are non-volatile and do not carry over into the steam. However, some manufacturers of compounds for treating boiler water have been using substances that contain tannins and lignins. Tannins and lignins are volatile and will impart a flavor to the dairy product. Also, it has been observed that some plants that chlorinate a water supply rather heavily may have trouble with a medicinal flavor in the finished product. Therefore, precautions should be taken to insure that treatment practices used for the boiler water will give the best steam.

Recently, some manufacturers have been using volatile ammonium compounds in boilers to reduce the corrosion in steam lines. The ammonium volatilizes along with the steam and carbon dioxide. When the steam condenses and carbonic acid is formed, it is neutralized by the ammonium. The Food and Drug Administration has declared that some of these compounds are toxic and should not be used.

The rust, wetness and superheat can be controlled by the use of strainers or purifiers and by placing the reducing valves a sufficient distance from the processing equipment so that the superheat is dissipated before it contacts the dairy product.

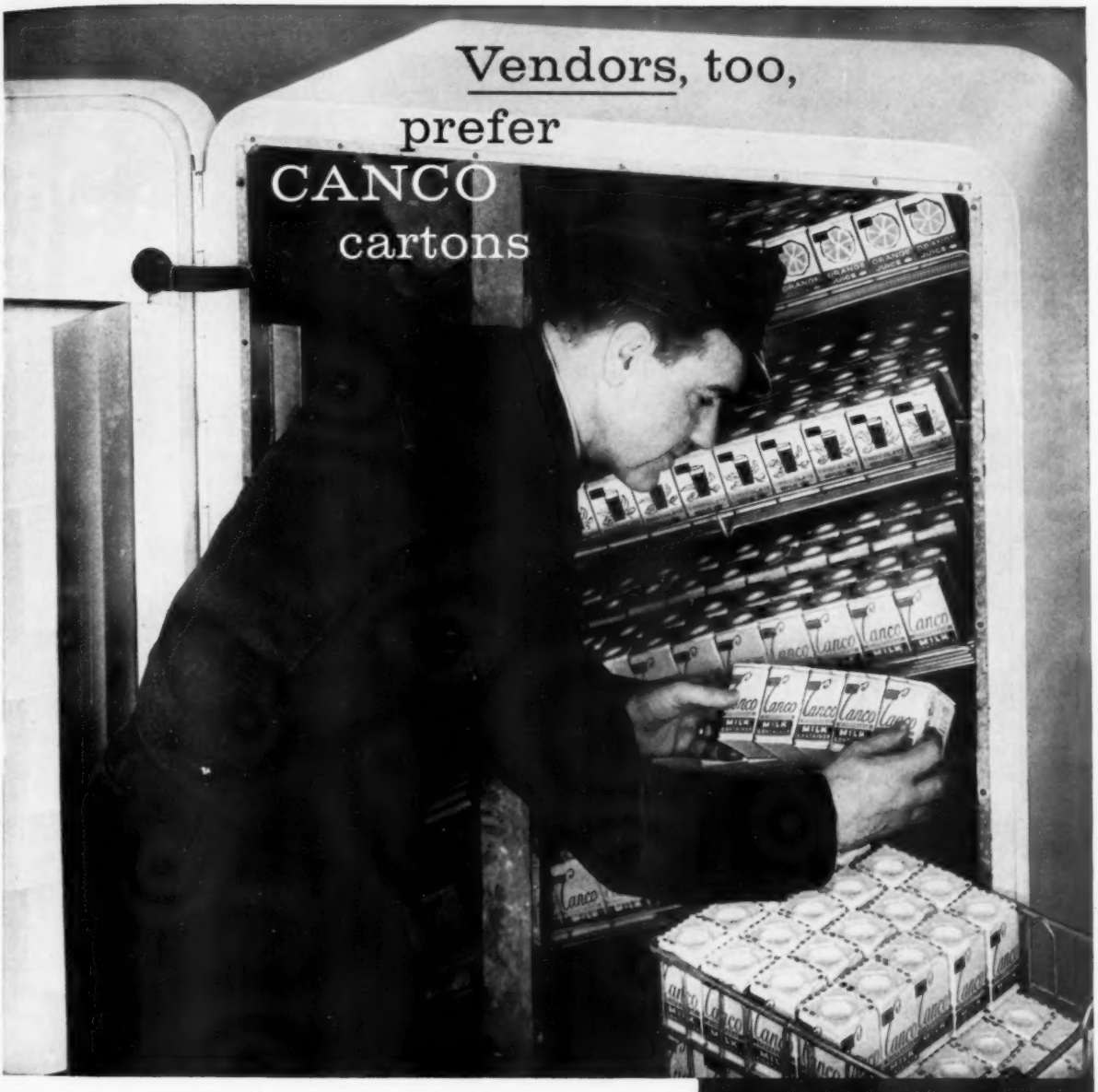
When the precautions mentioned above are observed, it is possible to take advantage of live steam for heating and removal of feed flavors to produce high quality dairy products.

Results

For the last five years, we have been experimenting with the Type III machine, the Vacreator. Here at North Carolina State College we have had an opportunity to observe it under a variety of conditions. Installations in fluid milk operations have permitted observations under commercial conditions for over two years. During the spring season, weekly scorings were made of fluid milk products before and after processing in Type I, II and III installations. All of these were regular commercial operations.

(1) *Flavor removal.*

All of the machines reduced the intensity of the feed flavors present in the raw milk. The improvement in the flavor scores were related to the intensity of steam treatment. As the amount of steam treatment increased, the amount of off-flavor removed increased. Vacuum treatment without the creation of considerable flash steam does not appear to remove the quantity of feed flavor desired by most dairy plants. This was particularly noticeable in the Type II installations. The operators were using vacuum and a minimum of steam prior to the off-flavor season. As soon as the feed flavors became pronounced the steam treatment had to be increased to give a satisfactory reduction in the off-flavor intensity. The Type III machines appear to be able to handle satisfactorily the average amounts of feed flavor found in raw milk. Where the Type II machines are installed, more grading and selection is necessary. Where vacuum only is used in Type I and II machines, a reasonably strict grading



. . . because their compact shape speeds loading, increases machine capacity up to 30%!

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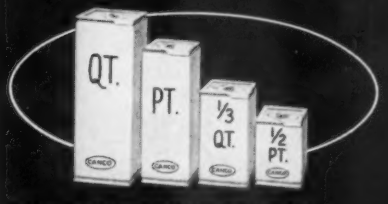
Ask the Canco representative to tell you more!

Ask your customers which carton they prefer!

Ask housewives, vendors, teachers, grocers—ask some children, too. Show them the Canco carton—any size—along with any other milk container you choose. You'll find the preference is overwhelmingly for Canco!



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program is necessary. Maximum steam treatment in the Type III machines did not remove bitterweed, hydrolytic rancidity and spoiled silage flavors.

Consumer acceptance has been very good. Most of the plants reported very few adverse consumer reactions when the change was made and in practically all cases, the complaints on feed flavor in milk by the customer have been reduced to a very low figure.

(2) *Cream line*

Obviously, any treatment that will increase the temperature of heating and/or time of holding much above the minimum pasteurization requirements for milk will damage the cream line. Where steam injection is used, one should expect that the cream line will be destroyed. Also, when milk is subjected to excessive agitation under atomizing conditions, high vacuum and some live steam, partial churning or oiling may occur along with the reduction in creamline.

(3) *Concentration or dilution*

Concentration is a serious problem for the dairy plant and of course dilution is illegal. Machines vary considerably because of radiation losses and the amount of superheat in the steam, but it has been observed that when the temperature of the milk discharged is considerably lower than the incoming temperature, concentration occurs. The range in temperature difference over which concentration may occur can be as great as 2 to 15 degrees F. depending on the equipment and its installation. When a low or negative temperature difference is maintained, then dilution takes place provided steam is used in the heating and deodorizing treatment. If no steam is used, the temperature difference must equal the radiation losses or concentration results.

Automatic controls (3) have been developed that are quite accurate in maintaining a pre-set temperature difference between the incoming and discharge temperatures. Once the desired temperature difference has been established, it will be satisfactory until operating conditions change. Then, adjustments must be made. Thus periodic testing is required to check on the finished product for concentration or dilution.

Vacuum treatment also affects the freezing point and titratable acidity. Indications are that the freezing point is altered in the direction of dilution to the extent of 0.8 per cent plus over minus 0.2. Titratable acidity is reduced about 0.01 per cent. This effect is believed to be the re-

(Please Turn to Page 86)

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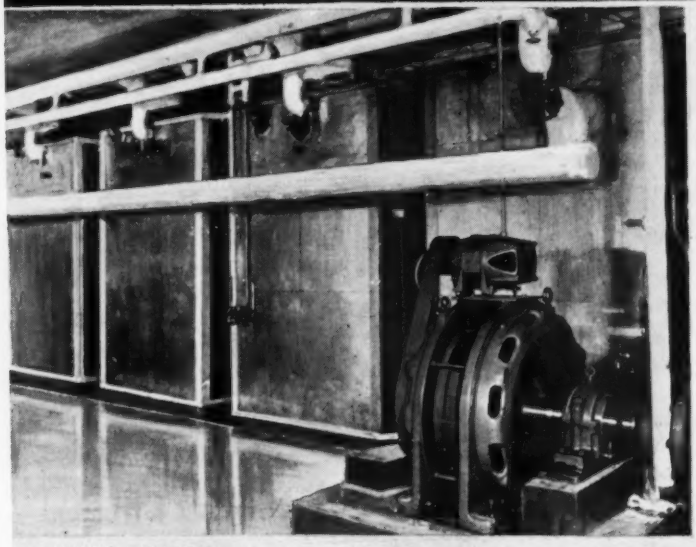

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- The ice water is pumped to your product cooler and returned for re-cooling. The water passes over the ice surface always, on its way through the "King Zeero" Ice Builder. Only in the "King Zeero" does this occur.
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By ALBERT W. GRAY

Conspiracy Suit Dismissed

CHARGES AGAINST THE Foremost Dairies of Arkansas and an employee of the company in a suit in the United States District Court filed last December by the owners of a milk route, were dismissed by that court on June 19th.

In this action the milk route owners contended that the dairy and this employee had conspired to establish a monoply and destroy competition in the transportation of the milk of farmers, dairymen and other whole milk producers in violation of the United States antitrust laws. Further, that by these acts the owners of this route had been damaged $7,500 that under the antitrust statute entitled them to three times that amount.

This statute which it was claimed had been violated, is in part, "Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several states or foreign commerce, is declared to be illegal."

This milk route, according to the testimony at the trial, had been purchased by these owners in November, 1954. During their operation of the route that ended on January 10th, 1956 by the refusal of this dairy company to continue purchasing the milk they hauled, their service had become progressively worse, substantial amounts of milk spilled, weight tickets not returned to producers, cans lost and returned filthy on unsanitary trucks.

In its dismissal of the suit the Federal court asserted that little need be said with regard to the contention that this dairy had violated the antitrust act. Their theory, said the court, is that this employee and the corporation were engaged in a conspiracy in restraint of commerce but it is well settled that a conspiracy cannot be committed by a corporation and its agents when the agents are acting for the corporation in the ordinary scope of their duties.

"In the last analysis," concluded the court, "the owners of the milk route were the architects of their own misfortune. Their own mismanagement of the route was the sole proximate cause of any loss sustained by them and there is no legal theory by which they can shift their loss to this dairy."

* * *

References

Whiteley v. Foremost Dairy, 1917 Trade Cases 68,748: U. S. District Court, Arkansas, June 19, 1957.

License Revoked

WHEN A DAIRY at Lykens, Pennsylvania, refused to pay a fee of $5 for a weighing and measuring permit for every farm equipped with a bulk milk holding tank from which this dairy collected milk the Milk Control Commission revoked this dairy's license as well as its right to apply for such a license for the ensuing year.

Under the Milk Control Law in that state it is provided, "It shall be unlawful for any milk dealer to buy or receive milk from producers at any plant, station, creamery, factory or other place within the Commonwealth, where such milk is weighed or measured, or to sell or deliver milk to stores or consumers unless the milk dealer holds a permit for each place of weighing or measuring such milk, issued by the Commission as herein provided."

This revocation of its license, the dairy contended, was "unjust, arbitrary, capricious, illegal and not in conformity with law, without authority, an abuse of discretion and utterly in disregard of the provisions of the Milk Control Law, the Constitution of the United States and the Constitution of the Commonwealth of Pennsylvania."

Further, this dairy protested, instead of milk being delivered at a dealer's plant, station, creamery or factory as formerly, it now collects milk in its own tank truck operated by its own tester or weigher and sampler at 19 different farms where the producers each own a bulk milk holding tank and that it is not obliged to have and exhibit at each farm a weighing or measuring permit.

In sustaining the action of the Commission the court said, "The law is clear, explicit, positive and reasonable. It is a reasonable exercise of the police power and the powers granted by the Milk Control Law."

Milk Control Com'n. v. Lykens Dairy, 124 Atl. 2d 441, Pennsylvania, July 17, 1956.

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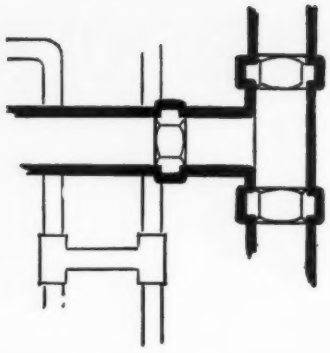

Plant Clinic

By V. H. NIELSEN

How to Estimate Fat Loss, Weight of Skim Milk

QUESTION—I have two questions pertaining to the separation of whole milk. First, I would like to know how we may estimate the weight of skim milk from a single day's operation so that we can make a comparison between the weight of skim milk with which we are credited at the drying plant and the weight of skim milk we have separated here. Second, I would like to have you show me how we can estimate the per cent of fat lost in the skim milk.

Creamery Operator, Iowa

ANSWER—Theoretically, of course, the pounds of skim milk is the difference between the pounds of whole milk received and the pounds of cream separated from the whole milk. This is true only if we make the assumption that no spillage or other losses have been sustained during the operation. For the purposes of our discussion we shall make that assumption. Then

$$s = (m - c), \text{ where}$$

m = pounds whole milk
c = pounds cream
s = pounds skim milk

Similarly

$$c = (m - s)$$

The weight of skim milk from a given separation depends then on the weight of the cream, and this, in turn, depends on the fat content of the cream. We can express this relationship by an equation which balances the fat in the whole milk with the fat in the cream and that in the skim milk as follows:

$(m)(p) = (m - s)(a) + (s)(b)$, where
p = per cent fat in whole milk
a = per cent fat in cream
b = per cent fat in skim milk

Treating this equation algebraically, we get

$$(m)(p) = (m)(a) - (s)(a) + (s)(b), \text{ or}$$
$$s(a - b) = m(a - p), \text{ from which}$$
$$s = \frac{m(a - p)}{(a - b)}$$

Then

$$\text{Pounds skim milk} = \frac{\text{Pounds whole milk (per cent fat in cream} - \text{per cent fat in whole milk)}}{\text{(per cent fat in cream} - \text{per cent fat in skim milk)}}$$

To illustrate with a specific example where

m = 100,000 pounds
p = 4.0 per cent
a = 40.0 per cent
b = 0.05 per cent

$$\text{Pounds skim milk} = \frac{100{,}000\ (40.0 - 4.0)}{(40.0 - 0.05)} = 90{,}112$$

I should call your attention to the assumption that the fat content of the skim milk is made by the fat extraction (Mojonnier) method. Operators frequently report fat contents of skim milk as low as 0.01-0.02 per cent. These analyses are made by the Babcock test and are quite unrealistic since the Babcock test is inadequate for the demonstration of the true fat content of skim milk.

You may now calculate the pounds of fat lost in the skim milk as follows

$$\text{Pounds of fat in skim milk} = \frac{(90{,}112)\ (0.05)}{100} = 45.0$$

from which

$$\text{Per cent of total fat lost in the skim milk} = \frac{(45)\ (100)}{(100{,}000)\ (0.04)} = 1.13$$

This important quantity could also be calculated in one step by making some substitutions in the above equation.

$$\text{Per cent of total fat lost in the skim milk} = \frac{\frac{(a - p)}{(100)}\ \frac{(b)}{(100)}}{\frac{(m)\ (a - b)}{(m)\ (p)}}$$

This will simplify to the following

$$\frac{(a - p)\ (b)\ (100)}{(a - p)\ (p)}$$

You will see then that the fat loss in the skim milk (as per cent of the fat in the whole milk) may be expressed as a function of the fat contents of the whole milk, the cream and the skim milk, respectively.

We will get the same result as in the example above.

$$\text{Per cent of total fat in the skim milk} = \frac{(40 - 4.0)\ (0.05)\ (100)}{(40 - 0.05)\ (4.00)} = \frac{180}{159.8} = 1.13$$

Since the fat content of the skim milk is small as compared with that of the cream we could justify an approximation by omitting the fat content of the skim milk from the denominator in the above expression, as follows:

$$\frac{(40 - 4.0)\ (0.05)\ (100)}{(40)\ (4.0)} = 1.13$$

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The Trend is to WESTFALIA

Some Fundamentals of Organization:

Efficiency Requires Constant Adjustment to Environment

By THORINGTON B. ROBERTSON, M.B.E.

THE SUPREME mission of Leadership in organization is to secure the utmost fulfillment of group purpose with the least expenditure of effort. Those who plan or direct group action must inevitably be preoccupied, therefore, with the practical conservation of Activity, with that is to say, *operating efficiency*.

Since the amount and kind of activity done by a group is profoundly affected by the environment in which it is carried on, efficiency cannot be truly measured without taking the nature of that environment into account. Hence the intensive systematic study of an organization's environment, far from being a matter of mere academic interest, is rather one of hardheaded expediency.

The activity of an organization will always be adapted to some aspects of its surroundings – it could not exist at all if it were not. The more fully and closely it is adapted to *all* aspects, however, the more safely and readily it will achieve the purpose toward which it is striving.

How can a dairy ensure that its organization is adapted to its environment? There are five ways:

1. By deliberately surveying all aspects of its environment and assessing the impact of each one upon its activities.
2. By studying the work being done on each job to ascertain how it conforms to the demands and opportunities of the environment.
3. By aligning all activity to the true needs of the environment and eliminating everything that runs counter to those needs.
4. By attacking the environment itself to make it more suitable for the organization's activity.
5. By surveying alternative environments and, if some other is found considerably better, by moving the entire organization into it.

The previous article in this series discussed the following points:

1. Whenever the members of a dairy organization set out to gain an objective they find that the world about them, (their environment) determines to some extent what they *may* do and to a large extent what they *must* do.
2. An organization's environment is made up of all the things, conditions and circumstances which exist outside it. The environment affects not merely the broad trend of activity which an organization carries on in the pursuit of its purpose but to an important extent the number and precise nature of the operations in each job.
3. Because the environment of every organization is different from that of any other, no two organizations can have exactly the same activities or identically similar structures. There is, then, no "ideal" pattern of dairy organization. Further, the doctrine of uniformity between branches or divisions of the same organization is a sterile one.

UNIVERSAL DAIRY COMPANY, INC.

Operating Committee
Transcript of Meeting

PRESENT: General Manager, Mr. Alto Z. Capitano (Chairman); Controller, Mr. Carl Pennypacker; Sales Manager, Mr. George Bildwell; Production Manager, Mr. Jack Wuerker; Office Manager, Mr. Emil Bonlivre; Personnel Manager, Mr. Joe Goodfellow; Advertising Manager, Mr. Ivan Shoutzall; Maintenance Manager, Mr. Will Wheelwright.

GENERAL MANAGER: Today I want to discuss a phase of our business that, I feel, has had very little consideration. I think most of you would agree that life would be very much easier for us if we didn't have to cope with constantly changing conditions in our market. It seems we never get our operations going on an efficient system but we are forced to adjust the whole organization to some new situation.

Well, of course, that is life. I need hardly remind you, however, that if we are to achieve the goals we have set for ourselves it is important that we adjust *quickly*, *accurately*, and *completely*.

Just this week I have run across two

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17 Working Milk Cases Easily Reached by Driver-Salesman from Cab Space

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Management should train the salesman to report news of interest on his route to his route foreman. It won't do any good if only the garage attendants know about it.

or three situations which suggest that we are *not* adjusting either quickly enough, accurately enough, or completely enough to avoid loss of time and effort.

For example, I noticed recently that the gallonage on one of our routes has been dropping at an alarming rate. I mentioned it to George Bildwell and he asked me to sit in when he discussed this with the route salesman. The very first thing the salesman told us was that the Nextown Dairy Co. has apparently chosen his route territory as a test area to see if they can break into the Ourtown market. Actually they have had scouts out surveying the area during the past three months. Now they have a crew of solicitors working from house to house and store to store and our man is almost powerless to cope with them. When the solicitors started, four weeks ago, he believed he had them licked because he found that his customers were all loyal and anything the solicitors gained was from our local competitors. He didn't want help so he didn't mention the matter to his foreman or to George. In the past week, however, Ourtown Dairy's persistence is producing results for them and we are being badly hurt.

What I want to know is: *Why didn't we know about this three months ago so that we could meet the threat then when it would have been easy, rather than now when it is going to be hard?*

MAINTENANCE MANAGER: Well, I heard a rumor a while back that Nextown Dairy had a truck over on the East side for a couple of days, but I figured if it was important George would know about it.

OFFICE MANAGER: I noticed a Nextown Dairy truck over there when I was driving across town about six weeks ago. I think I mentioned it to someone at the time. George and I have a nice working arrangement, however, he doesn't try to run my department and I don't try to run his. I thought the same as Will. I expected George would know about it if it was important.

GENERAL MANAGER: All right, let's leave that for a minute. I was down in the cold room last Friday and I noticed a record the boys were keeping down there showing the number of cases of each product going out every hour to the wholesale and retail trucks. I asked them who used it and they said it used to be checked regularly by someone from the State Milk Board but that no one had looked at it for six months.

OFFICE MANAGER: Are they still keeping that up? They should have stopped keeping those special Milk Board Cost Study records six months ago when the project was completed. My department did.

PRODUCTION MANAGER: Well, why wasn't I told? I didn't know the Cost Study was finished.

MAINTENANCE MANAGER: Can I stop keeping all those detailed figures in my department? I thought someone was going to jump me for them any minute.

GENERAL MANAGER: You can eliminate them right now. Again I'd like to ask: *Why didn't we all know when the project ended so the entire department instead of just one could save a lot of unnecessary work?*

One more thing. Some time ago there was talk in the newspapers that to relieve congestion the City Traffic Department was planning to make all the downtown streets from First Avenue to Twentieth one way thoroughfares, even East, odd West. As a result the Route Foremen rearranged the routing on all our downtown routes to conform. Now it appears that no official approval could be secured from the City Council for the

"The front office just told me we've been making out product reports for nothing for the past half year. State Milk Board stopped requiring it six months ago."

plan. Instead the Council has approved an ordinance which requires all truck deliveries to be made from the back lanes. Now our trucks are going to have to be completely rerouted for the second time and all the original work was wasted.

SALES MANAGER: That was my

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"The week of April 29, 1957 to May 4, 1957 we put samples out. Prior to this date we were selling an average of 126 quarts per week. The total quarts sold on retail routes April 29th through May 18th, 1957 (3 weeks) was 5,926, which is an increase of 1568 percent."

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fault. I thought the one-way-street plan was sure to be approved. This new ordinance came as a complete surprise.

GENERAL MANAGER: I'm not blaming you, George, but I want to know: why was it a surprise? *Why didn't we have the right information so that the change could be made correctly the first time?*

PRODUCTION MANAGER: I'll tell you one reason. There are more changes going on than we can keep track of. Frankly, I can't foretell just what new development may turn out to be important to my department. None of us has the time to watch everything, the City Council, the Milk Board, our competitors, our customers, the union, business and economic trends, new industrial developments, and who knows what else. Each of us does his best to follow the things that he *knows* affect his own work but it would be a full time job to watch everything and we already have full time jobs running our departments.

ADVERTISING MANAGER: Merely reading all the trade journals to keep up with the latest ideas in merchandising takes about all the time I have to spare. I think this is just one of those things. We can try to keep better informed but we'll never be perfect and we'll just have to expect some loss of time and effort, it's inevitable.

PERSONNEL MANAGER: I don't agree with you, Ivan. We never deliberately waste supplies and materials; to my mind, wasting man-hours is much worse. It's not only a loss to the Company, but it is the kiss of death to morale. For instance, the Foremen are boiling mad about having to do that rerouting job all over again. They blame us as managers and their confidence in our judgment has been badly shaken. Personally, I think they are right. It's our job to *know* what's going on.

CONTROLLER: I have a suggestion. In the army we had an Intelligence branch that specialized in keeping track of outside developments, summarizing them, and sending the information through to the officers in command of the various units. I suggest we set up our own Intelligence Section. One man can do the job, at least at first to see how the idea works. By keeping in constant touch with all of us he can not only bring us up-to-date on what is happening outside the company but he can pass along to each of us the latest developments in the other departments.

GENERAL MANAGER: That's a thought, Carl. What do the rest of you think?

OFFICE MANAGER: Sounds like another bill of expense to me. First you get the man. Then he needs a secretary. Then they both need desks and telephones and office supplies. Pretty soon you have an "empire" to cope with.

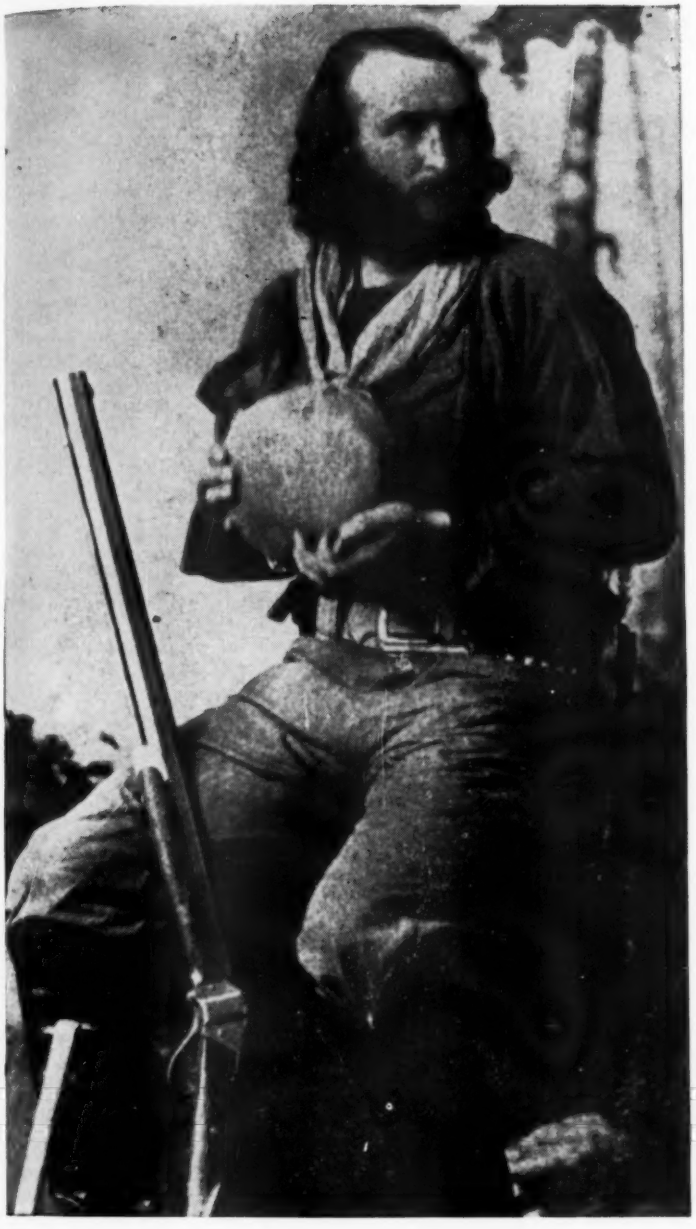
PERSONNEL MANAGER: If we eliminate some of the present waste of effort caused by not knowing what is going on, I think the section will pay for itself. I can see another problem, however. The right man may be hard to find. He will have to know every phase of our operations in order to judge what is important and what

Those who plan or direct group action must be preoccupied with the conservation of activity. Otherwise situations like this could develop.

is not. He'll have to be the kind of person who can build up cordial relations with top people outside the company. He will also have to be able to circulate in a friendly way among the people in our own Company. He will have to be able to boil down a mass of data to one or two crucial facts. He will need to be extra conscientious and systematic not to overlook something off the beaten track. Finally, he will have to have good judgment because, believe me, the man himself will either be a lot of help or he will be positively dangerous.

SALES MANAGER: I think Johnny Stryve, my assistant, would be a good man for the job. He's had a lot of

(Please Turn to Page 86)



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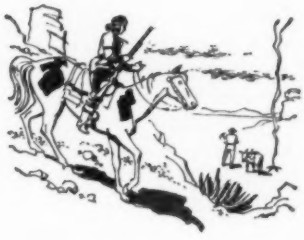
The man who named Tombstone, Arizona



THE SURPRISED government scout from Camp Huachuca reined his horse to a stop at the sight of Ed Schieffelin. And when Schieffelin admitted he was actually living and prospecting in Apache country, the scout warned him, "All you'll ever find'll be your tombstone."

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The Tombstone mine itself never amounted to anything. But Schieffelin just kept on prospecting—and within a few years, he turned out to be a millionaire. The hills he had risked his life in were practically made of silver.

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ROLAND BARTLETT PREDICTS:

Concentrated Milk May Change Production, Consumption Habits

A STERILE concentrated milk that can be substituted for fresh whole milk is likely to be sold on a nationwide basis within a relatively short time. This is the opinion of Roland W. Bartlett, professor of agricultural economics, College of Agriculture, University of Illinois.

Professor Bartlett bases his conclusions on a number of factors. One, taste tests made at the University of Illinois and other places indicate that it is now difficult to distinguish a high-quality, reconstituted, sterile, concentrated milk from fresh whole milk.

Two, quality control of sterile concentrated milk is likely to be under the jurisdiction of the United States Pure Food and Drug Administration which for several decades has been responsible for the quality control of evaporated milk.

Three, the economies in the transportation and marketing of sterile concentrate are so great that there appears to be a large potential market for this product. More specifically, this suggests that there will be large population groups to whom the sterile will be made available at substantial discounts below the price of fresh, whole milk.

One firm that has already invested over a half million dollars on research estimates that the market for concentrate will be about six billion quarts annually or about one-fourth of that for fresh whole milk.

Four, based upon the taste tests, consumer acceptance of sterile concentrated is likely.

Five, several companies have spent large sums of money developing a sterile concentrate, an aseptic process of canning and practical ways for marketing this product. They are doing these things with an eye on future profit.

The potential market for concentrated milk is wide and beckoning, says Professor Bartlett, because its use will bring about a decrease of five, six, seven and, in some instances, ten cents a quart in most southern and northeastern markets, where three-fifths of the population is found. Assuming that trade barriers of one kind or another are overcome, an increase of 15 to 20 per cent in per capita milk sales nationally is possible through the use of concentrated milk in the next decade.

Such use will slow down milk production in high-cost areas and accelerate milk production in low-cost areas. And it will bring about a sharp decrease in distribution margins and in Class I prices as well as in blend prices in the high-cost areas.

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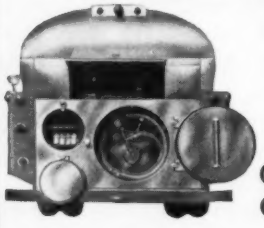

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smoother buttermilk

Want to increase the sales appeal of your buttermilk?

Make it smoother. Use nonfat dry milk solely, or standardize at 11% serum solids.

Try it. See the results in more appetizing, velvety smooth buttermilk.

Nonfat dry milk needs no refrigeration. It is economical to store and easy to use.

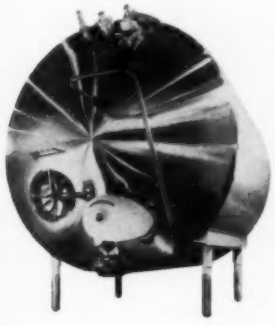
nonfat dry milk

Get the facts. Write: Dept. A-12

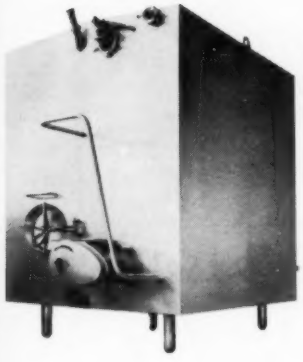
AMERICAN DRY MILK INSTITUTE, INC.

221 North LaSalle Street • Chicago 1, Illinois

DAIRY TRENDS



Standard cylindrical tanks are built for long, sanitary service. A 3/16" carbon steel plate sheath eliminates distortion. Inner tank of heavy 18-8 stainless steel assures complete sanitation. Working capacities range from 600 to 8000 gallons.



Rectangular tanks have the same long-life features as cylindrical tanks, but are designed to fully utilize restricted floor space. A 1500 gallon rectangular tank occupies the same floor space as a 600 gallon cylindrical tank. Capacities from 1000 gallons up.

Longer-lasting equipment, a sound answer to economical capital expansion

When you select a dairy storage tank, look closely at the specification to see what extra construction features are provided. Often times there are none, unless you pay *an extra price.*

In order to gain maximum longevity for your storage tanks insist on these "rugged construction" features:

- Cylindrical tanks rated for *internal* pressure that will permit air unloading.
- Heavy ⅜" outer sheathing so that you can install, operate, maintain and even relocate your storage tank without *distortion damage.*
- ASME approved and rated wall cooler jackets for 150 psi working pressures.

Individually, each of these features contributes to lower operating costs and longer service life.

"Rugged construction" is not a unique feature with Pfaudler, but the fact that these and other important design considerations are yours *without additional cost* is unique.

Take, for example, the wall coolers on Pfaudler tanks—extra strength is achieved by a pattern of circular welds, called "dimples." Through this dimpled jacketed construction, a heavy jacket is welded directly to the 10-gauge stainless tank wall. This construction is approved by ASME and rated for working pressures up to 150 psi.

This design reduces the internal spacing between the jacket and tank wall so that less refrigerant—whether ammonia, Freon, or sweet water—is required and it circulates rapidly to promote faster heat transfer. Also, the dimpled construction produces greater turbulence of the coolant, further accelerating heat transfer.

We believe that these features, coupled with the complete design specifications given in our new Bulletin No. 943, will interest you enough to talk over your storage tank problem with a Pfaudler representative. Why not write today for a copy of it?

THE PFAUDLER CO.

a division of PFAUDLER PERMUTIT INC. • Rochester 3, New York

It Can be Kept at 70 Degrees F. for Six Months Without Hurting Flavor.

Sweetened Cream Is New Product with Many Uses, Good Potential

A SIMPLE AND INEXPENSIVE way to preserve milk fat is the big promise of a new product described as modified sweet cream. The product, described in the November report of Agricultural Research put out by the USDA, is easily made. It can be stored at room temperatures of 70 degrees F. up to six months without deterioration in flavor.

According to the report the product contains, "about 40 per cent fat, 30 per cent sugar, 20 per cent water, and 10 per cent nonfat milk solids. Fat content is approximately five times that of sweetened condensed milk and twice that of coffee cream." Composition of the product can be varied to fit the use for which it is intended. The key element of keep-ability is imparted by the sugar. "Preservative action of the sugar", the report says, "keeps it from spoiling just as jams and jellies keep because of their very high sugar content."

Similar in viscosity to sweetened condensed milk, the product thickens and browns at high storage temperatures but to a lesser extent than does sweetened condensed. It has been stored successfully for 6 months at 70 degrees F. but apparently can be stored longer at 60 degrees F. The product will last a week at room temperature after having been opened.

The USDA report says, "The product is simply prepared and requires little equipment—a centrifuge to separate cream from milk and facilities for pasteurizing before packing. High fat cream can be obtained by heating after the first separation, then heating again to increase fat to the desired level.

MODIFIED SWEETENED CREAM IN A FEW DROPS

1. A mixture of high fat cream, nonfat milk solids, sugar and water.
2. Product is simple to make, has long storage life; six months at 70 degrees.
3. Biggest potential use is in ice cream but home use in baking, coffee and cereals is real possibility.

"Homogenization may be necessary for some applications but its advantages may offset the added cost and time. This step prevents fat separation (unprotected fat on and near the top may oxidize if not homogenized), permits control of lactose crystallization, and decreases tendency to churn when whipped. The cream product can be homogenized immediately before or after pasteurization."

The modified sweetened cream and the ice cream industry look as though they might hit it off well. This new product could take the place of frozen cream in the opinion of USDA food technologists.

There is a possible use as a home product seen for the sweetened cream. It whips into a light topping that can be used on cakes, candies, and baked goods. It can be diluted and used as coffee cream or as a cereal cream.

Research on the product continues. Its commercial potential has had only a limited testing. Large scale manufacturing methods have not been developed. However, application for a public service patent has been made by the USDA.

The new product was developed by Arjen Tamsma, a dairy manufacturing technologist, and R. W. Bell of the Eastern Utilization, Research and Development Division of the United States Department of Agriculture.

GROWING GROWING GROWING GROWING GROWING SPARTA

Look to Sparta For "What's New" IN '58

IN-THE-LEAD DAIRY BRUSHES

Many of the Sparta advances which you like so much in Sparta Brushes have actually revolutionized the dairy brush industry. That's why Sparta has become the leader in a few short years. The fresh new ideas in Sparta Brushes today will bring you even better brushes in the future . . . because Sparta is always on-the-move . . . always ahead — in designing, manufacturing, and servicing the industry.

SPARTA BRUSH CO., INC. SPARTA, WISCONSIN

this is it!

Promote Cottage Cheese with the sunburst PENNY CANDY JAR

this is it! A stimulating new idea for promoting cottage cheese, Thatcher's Sunburst Penny Candy Jar is an exciting package idea inspired by the popularity of the Victorian Penny Candy Jar. Designed for distinctive eye-appeal . . . clear, sparkling glass with Early American Sunburst Pattern. No colors to worry about in inventory. Fills easily on automatic or manual filling lines. The same jar holds 12 or 16 ounces. Metal or polyethylene lids available.

this is it! The perfect promotion for six, eight or more weeks, as the jar can be used in every room in the home. And for additional sales appeal . . . a specially designed set of 10 decals are offered your customers free . . . retail value $1.25.

Send for Details

COMPLETE PROMOTION KIT

Colorful retail leaflets with handy order blank.
POINT-OF-PURCHASE DISPLAY holds actual jar.
STREAMERS for store and window trim.
NEWSPAPER MATS, RADIO SCRIPTS and TV MATERIAL

THATCHER GLASS MANUFACTURING CO., INC.
10 Grand Central Avenue, Elmira, N.Y.

☐ Please send information about your Penny Candy Jar Cottage Cheese Promotion including dairies using it.

☐ Have your representative contact us

NAME _____ TITLE _____

DAIRY _____

STREET _____

CITY _____ STATE _____

Mellorine Production Increases One Per Cent in a Year

MELLORINE PRODUCTION in 1956 increased only one per cent over 1955, the smallest rise since figures started to be compiled on the product. Mellorine is a frozen dessert made with fats and oils other than milk fat.

The USDA reports that mellorine and mellorine-type frozen dessert production was estimated at 32,669,000 gallons in 1956. There were, however, wide variations of changes by states between 1956 and 1955. Texans can point with something less than pride to the fact that the Lone Star State is the leading producer of a substitute for the real thing. Texas is so far out in front in this category, it is almost no contest.

Of the nine states having three or more mellorine factories, Texas has more than the rest of them together, 944. It also produced more mellorine than the rest of them together, 19-382,000 gallons.

The state ranking second in output is Illinois which produced 4,019,000 gallons. This figure represents a nine per cent drop from previous year's production figures. Third was Oklahoma with 3,096,000 gallons, up one per cent. Next was Missouri with 2,298,000 gallons, down 10 per cent. Then comes California with 2,023,000 gallons, down two per cent. Arkansas' total gallonage of 603,000 included a 15 per cent increase over 1955. Alabama showed a 12 per cent increase over 1955 with 511,000 gallons produced in 1956. Oregon produced 363,-000 gallons, one per cent less than in 1955. Montana showed a sharp increase, 43 per cent more than in 1955 with 227,000 gallons produced.

Figures such as these can sometimes be misleading. They should be used only to compare production figures within one state for two or more years. The percentages for one state should not be used for comparison with those of another. The four per cent increase in Texas, for example, while it is the smallest increase on record still towers over Montana in *number of gallons* produced despite Montana's 43 per cent increase.

Here is an example of how misleading figures can be: USDA reports that between 1950 and 1956 frozen products other than ice cream rose 181 per cent while ice cream production rose only 16 per cent. The same report shows that ice cream production in 1956 was 640,884,000 gallons and all other frozen dairy products – ice milk, milk sherbet, and mellorine – totalled only 171,004,000 gallons.

Mellorine plants totalled 1,326 in 1956, an increase of 33 plants over 1955. Most of the Texas plants were small manufacturers selling at retail only, such as drive-ins, drug stores and roadside stands. Most states where mellorine is legal allow sale of the product in package containers only. The plant manufacturing for wholesale, usually has a much larger output than the counter-freezer type of producer who sells only at retail.

QuiKold RINGS UP PROFITS FASTER!

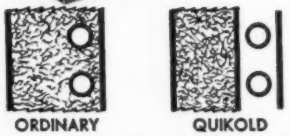
builds greater Milk and Dairy product sales

MODEL 1400-WD-2

Trim, modern S & S QuiKold coolers build greater milk sales in food stores, restaurants, delicatessens, schools, dairy stores and all locations where dairy products are sold. They provide large storage space for package or bottle milk and dairy products . . . yet require a very minimum of floor space to return greater profits per square foot of floor area used.

QuiKold cool-R-in coils are in the storage area . . . not inside the cooler walls . . . to assure maximum efficiency. Cooling is fast and economical . . . with proper temperatures maintained uniformly in every part of the storage compartment. Guaranteed dependability of construction and operating mechanism means long life with low maintenance.

There's a QuiKold cooler to meet the needs of every location . . . Order yours in any quantity, large or small, at no extra cost. QuiKold electric coolers are Underwriters' Laboratories approved. Write for free catalog today. 5501



ORDINARY QUIKOLD

The secret of QuiKold's greater efficiency is right in the storage area — QuiKold cool-R-in coils.

S&S Products, inc.

P. O. BOX 1047 LIMA, OHIO

BUILDERS OF BETTER BEVERAGE COOLERS — SINCE 1926

YOU Write the Gag

JOSEPH ADDISON said, "Man is distinguished from all other creatures by the facility of laughter." (Except maybe the hyena: *Editor's note.*) Isn't it sad that cows can't laugh; think how "Write the Gag" would be inundated. Not by jokes about cows, so much, as with jokes about producers, processors, milkmen, and even consumers.

Ah, well, we must be satisfied with mere humans. Care to prove your superiority to the Animal Kingdom?

"WRITE THE GAG" RULES

1. The *American Milk Review* will award $5.00 to the person submitting the best caption for this month's "Write the Gag" cartoon. A prize of $3.00 will be awarded for the second best caption.

2. The editors of the *American Milk Review* will be the judges and their decision will be final. In case of ties, duplicate prizes will be awarded.

3. Write captions – as many as you wish to send in – on a postcard and mail to: "Write the Gag" Editor, *American Milk Review*, 92 Warren Street, New York, N. Y.

4. Be sure to write your own name as well as the name and address of your company on each postcard.

5. All entries for this month's contest must be received by January 10, 1958.

MAY WINNERS

"Write the Gag" returns to AMR after a six months' vacation.

The line, *"She heard there was a stripper on T. V."* has been awarded the first prize of $5.00 which goes to:

Henry Hartman
Beauty Brand Dairy
3215 South Lafayette Street
Fort Wayne, Indiana

Second prize, $3.00, was won by the line, *"STOP DREAMING . . . Get to work on her!"*

Gordon Gent
Sales Promotion Manager
Bowey's, Inc.
771 Bedford Avenue
Brooklyn 5, New York

HONORABLE MENTION

"I still don't like these new grade A sanitation regulations."

Janet Inabnit
Quality Milk Plant
Conrad, Montana

"Betsy wants to know what that T.V. doll has that she hasn't got!"

Henry Kiefer
Spring Brook Dairy
Bremen, Indiana

"You and your complaining about fresh milk."

George Saurman
Levengood Dairies
Pottstown, Pennsylvania

"Well, it was your idea to advertise 'Contented Cows' so move over!"

Beverly J. Bird
Dairies Service, Incorporated
1936 West 33rd Avenue
Denver 11, Colorado

Robert H. North Appointed Executive Secretary of IAICM

ROBERT H. NORTH has been appointed executive secretary of the International Association of Ice Cream Manufacturers. He succeeds Robert C. Hibben, who retired after 25 years in the post. The appointment, announced at the Association's convention in San Francisco, became effective November 1.

The Association represents ice cream manufacturers in the United States and Canada and has a wide membership throughout the world.

Mr. North steps up to the executive secretaryship after a three-year stint as assistant executive secretary. He joined the IAICM staff in 1945 as executive assistant and public relations director.

Born and raised on a dairy farm in Wisconsin, Mr. North served as commissioner of the Wisconsin Grain and Warehouse Commission before coming to the capital city as secretary to Congressman B. J. Gehrnann. In 1942 he

ROBERT H. NORTH

was appointed an information specialist for the Department of Agriculture and shortly thereafter became coordinator of the organized war time food campaigns including the National 8-Point Milk Production Program. Before leaving the USDA his responsibility was increased to cover all campaigns including nutrition and home food preservation, in addition to planning and executing the department's efforts in the dairy program.

Mr. North has earned law degrees from Southeastern and George Washington Universities and is a member of the bars of Wisconsin, the District of Columbia and the Federal Communications Commission.

He is vice-president of the Washington Trade Association, the Public Relations Society of America and the American Public Relations Association.

●

BORDEN BREAKS GROUND FOR NEW ICE CREAM PLANT

Groundbreaking for the most modern ice cream manufacturing operation in the northeast, a 60,000 square foot Borden Company plant, took place Nov. 14 at the Syracuse Industrial Park, on the outskirts of that city.

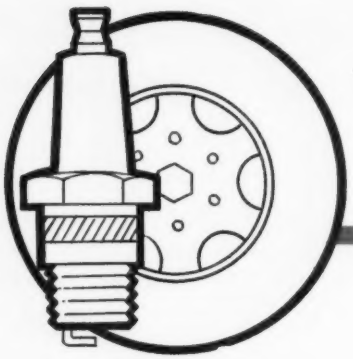
With a capacity of 2,000,000 gallons per year, the new plant will employ 100 or more persons. Its design includes a specially engineered hardening tunnel; 6,200 square feet of freezer space; and 2,500 square feet of air-conditioned offices.

SUPERIOR
New Stainless Steel Cup-Type
Superior Dispenser Cans
Can Take It!
Solderless, Seamless, Superior Construction for Longest Life • Easy to Clean • Easy to Stack
JOHN WOOD COMPANY
Superior Metalware Division
509 Front Ave., St. Paul 3, Minn.
JOHN WOOD
Tinned Steel Cup-Type
Clip-Type
Stacking-Type Umbrella Cover
Channel-Type
WIRE CRATES for paper and glass bottles • DISPENSER CANS
MILK CANS • ICE CREAM CANS • HARDENING BASKETS
HOODED and OPEN PAILS • STRAINERS
Metalware for the Dairy Industry and Waste Receptacles

May the Christmas Star of Peace and Goodwill Shine on you throughout the coming year

Liberty Glass Company

SAPULPA, OKLAHOMA



Truck Talk

By HENRY JENNINGS

What Kind of Winter Oil for Your Fleet?

AS FLEETS begin to settle down to winter operation, this department begins to accumulate questions having to do with cold weather operation. Chief among these are problems of hard starting and of lubrication with cold running engines. This year an abnormally high percentage involve the use of multigrade oil. This leads us to believe that more fleets are taking an interest in this type of oil which has not as yet been used to any great extent in fleet operation although it has been successfully tested in other types of operation. The way the questions are asked indicates that many fleet operators do not really know what multigrade oil is or what it will do.

Multigrade oils are available in three types. They are designated as 5W-20, 10W-30 and 20W-40. These symbols were originated and adopted by the Society of Automotive Engineers. They are standard throughout the industry. They describe the viscosity characteristics of the oil.

Starting and Oil

Everyone knows that oil tends to thicken and have greater resistance to flow when it gets cold. It becomes thin or light when hot. This means that regular oil will thicken when the engine stands and gets cold. It will thin out when the engine is under sustained load and gets up to operating temperature. The conclusion is obvious. The natural tendency of oil is to be thick when you want to start and this puts a greater load on the electrical system and starter and makes for hard starting.

But when the truck is working at operating temperature the oil thins out and of course is susceptible to high oil consumption. Before it gets up to operating temperature the thick oil provides a drag on the internal parts of an engine and causes high fuel consumption. The ability of an oil to have the same viscosity at widely different temperatures is measured by oil technicians by what they call a viscosity index.

Where severe winters prevail getting the trucks started in the morning can be a very expensive proposition. New oils now available may help substantially in meeting this problem.

Multigrade oils, then, are oils that have an extremely good viscosity index. For instance the 5W-20 oil has the characteristics of a 5W oil at 0 deg. F. and the characteristics of a 20 oil at 210 deg. F. It follows that the 10W-30 oil has the viscosity of a 10W oil at 0 deg. F. and the viscosity of a 30 oil at 210 deg. F. Similarly the 20W-40 oil has the viscosity of a 20W oil at 0 deg. F. and that of a 40 oil at 210 deg. F.

Since all of this sounds good in the abstract, why have fleets shied away from the use of multigrade oils? The answer is cost—that is, the cost of the oil itself. Multigrade oils sell for about twice the price of more conventional

STRETCH

your delivery truck dollars...

with DOUBLE-LIFE

DIVCOS

Leading fleet operators from coast to coast are standardizing on DIVCO Delivery Trucks because DIVCOS have proved their ability to give 10 to 15 years of low-cost, dependable delivery service. Contrast this with the 5 to 7-year life span of many conventional trucks. The savings are tremendous! Drivers like DIVCOS better too! Nineteen models to choose from. Contact your DIVCO Distributor now or write direct.

Over 80% of all DIVCOS built are still in use!

DIVCO TRUCK DIVISION — DIVCO-WAYNE CORP., DETROIT 5, MICHIGAN

oils. If you are paying about $.60 per gallon for regular oil, the multigrade oils will cost about $1.20 per gallon.

The reason they are so expensive is presumably the cost of producing the oil, since there is no reason to suppose that they cost more to distribute than what you are using now. Getting into the intricacies of producing this type of oil is a fruitless pastime for those of us who are ignorant of refining technology. But even while we do not know the refiner's problems we do know that to produce this type of oil he must select and blend his base stocks with unusual care. He must use the latest and most expensive refining processes and he must load the oil down with expensive synthetic viscosity index improvers.

Years ago we used to get some of the multigrade effect by using the Pennsylvania type of oil, but at present the state of the art has gone so far beyond that, that some refiners do not choose to start with a Pennsylvania crude any more.

If you have been able to get over the idea of paying double the price for oil, let's make some sort of an analysis of what it could possibly do for you. It just could be that the increase in the cost of oil was the best money you ever spent.

In the first place it would eliminate the need for making seasonal changes in the grade of oil you purchase and install in your vehicles. This may sound like small comfort for double the cost of the oil so we will drop it. It is surely a convenience but it is a little hard to measure in money.

Reliable Oils

But if you are operating in a climate where you have severe winters, you have need for some means of assuring reliable starting when the drivers arrive in the morning. If you have inside, heated storage, well and good, but did you ever stop to think what the annual cost per truck is? Real estate and building costs will vary widely but if you have to build a storage garage now to house your trucks, it is surely going to cost between $1,500 and $3,000 per truck per year. That will buy a lot of oil if your main problem is starting and a more expensive oil will make it possible to start without the shelter.

If you are using push starts, you can figure on 15 minutes per start for two men, which is roughly $1.50 per start plus the damage you do by pushing and the delays encountered waiting for the pusher. If you have 50 or 60 days of push starts per year, you are spending a lot of money getting the fleet started. If the trucks can be started at the cost of some premium oil, it would seem to be a bargain.

The other means of making sure trucks will start in severe weather is by installing immersion heaters. Some figures at hand indicate that the costs per truck for installation of power lines, etc., and the heater, is about $41 per truck per year with a seven-year write-off. Current costs are about $36 per year.

It is awfully easy to go overboard on a new development and forecast a lot of things that never materialize. But even with the exercise of normal restraint, the experience available (admittedly meager) shows the desirability of running a test of these oils wherever there is a starting problem due to weather.

Where performance counts, Murphy milk truck bodies excel

Real performance boils down to one thing – delivering milk in the most efficient, economical way year after year. Every Murphy body is engineered to give this kind of performance. That is why you get strong, lightweight steel construction for extremely long life, low operating costs – custom built bodies to best suit your particular needs – designing for complete accessibility, good looks, driver convenience and safety – all these advantages and more – making a Murphy body your best investment.

Another Murphy milk route body for Cherokee Farms. Has 114 case capacity — based on 20 qt. paper case.

Custom built bodies for the size, make and model chassis of your choice — perfect balance — mounted low on chassis — warp-proof steel door frames — stainless steel door scuff plates — galvanized steel sub-floor — vapor seal treatment.

Write, wire, or phone for complete information

MURPHY BODY WORKS, INC.

310 Herring Avenue • Wilson, North Carolina • Telephone 7-1146

How aluminum helped sell all these products

MORE IMPORTANT... HOW AlumaSEAL HOODS CAN HELP YOU SELL MORE MILK

It pays to study the buying habits of your customers—habits that often give you clues to ways to increase your own sales.

For example, you find more and more perishables protected by aluminum in the typical home. Housewives have learned that aluminum lasts for the life of the product it protects, keeping it fresh and flavorful. They know aluminum won't tear, soil, or fray.

What's more perishable than milk? How many new customers could you win with the lure of AlumaSEAL Hoods? How many of your present customers would appreciate the extra protection you could give their milk with AlumaSEAL?

If the idea appeals to you, it's a simple matter for us to adapt your present cap design to AlumaSEAL . . . or develop a completely new design from your choice of 12 brilliant colors.

Talk to your dairy supply jobber for more information. Or write us direct at Oneida, N. Y.

Notice the exclusive hinge on these AlumaSEAL hoods made for 48 to 56mm bottles. Snaps open, snaps shut on a hinge. And it really *snaps* shut so your milk stays fresh to the last drop.

New AlumaSEAL hood for 38mm bottles. You can add the lure of AlumaSEAL to this popular new-size bottle, too. Special heat-treating helps AlumaSEAL hold its snap-off, snap-on ability.

SMITH-LEE CO., INC., ONEIDA, N. Y.

SPECIALISTS IN DAIRY PACKAGING

MEMBER NATIONAL DAIRY COUNCIL

RIGHT or WRONG in Labor Relations

A round-up of day-to-day in-plant problems and how they were handled by management men. Each incident is taken from a true-life grievance which went to arbitration. Names of some principals involved have been changed for obvious reasons. Readers who want the source or citation of any case may write to *American Milk Review*, 92 Warren St., New York, N. Y.

When Can't You Fire a Worker for Swearing at His Foreman?

What Happened:

"Hey, handle that the way you're supposed to!," the foreman called over to Fred Brand. Brand replied that he was handling it properly – only he used unprintable language. The foreman fired him on the spot, maintaining that Brand's use of profane and obscene language to him interfered with discipline and efficiency and created a disturbance. But Brand protested that the words he used were

the way the whole work gang talked all the time. Besides, his work record was good, he'd always gotten along well with the foreman before, and this was the first time he'd ever done anything wrong. Getting fired was too tough, everything considered.

Was The Worker:

RIGHT ☐ WRONG ☐

What Arbitrator Spencer Pollard Ruled: "The Arbitrator believes that this incident does not indicate any basic unfitness of Brand for his job. He has a good work record with this company and a good record of cooperation with his foreman and fellow workers. In general, the Arbitrator would say that discharge is too strong a penalty for a first offense by a good employee, especially where the offense is only verbal and no real damage to person or property is involved. Nearly all Arbitrators require a warning and a chance to correct behavior, where the employee's record is as good as it is in this case. It is the decision of the Arbitrator, therefore, that Mr. Brand was not discharged for just cause." The employee was reinstated.

When Can You Crack Down On Abuse of Rest Breaks?

What Happened:

As part of a general waste-reduction move, the company instituted a new rule. Workers were given 28 minutes, in addition to lunch and wash-up time, for "personal time-off." They were to sign in and out when going on relief. They were told that anyone failing to sign in and out or exceeding the allowed time "will be subject to discipline." The workers (about half of them were women) raised a ruckus, complaining that:

1. The new rule is insulting and downright embarrassing.
2. It requires us to keep a record which can be used against us for discipline. That's not reasonable.

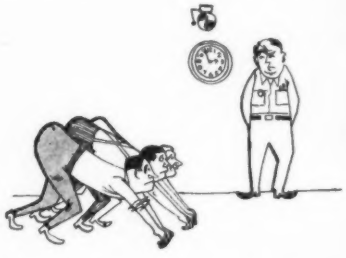
The company explained:

1. We pay production rates for that personal time off. We have a right to make reasonable rules to control the amount of time workers use that way.
2. Discipline is not our main purpose – just control.

Was The Company:

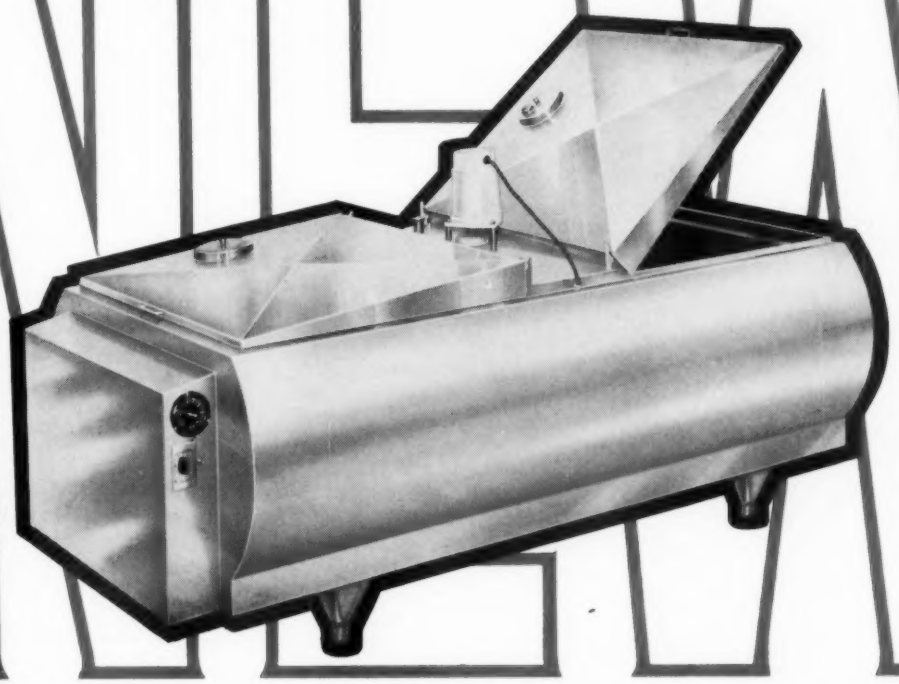
RIGHT ☐ WRONG ☐

What Arbitrator Louis Crane Ruled: "Unquestionably the company was legitimately concerned with the need for greater economies in its op-



erations. It properly recognized that since it was paying for personal relief time at regular production rates, it was important to eliminate abuses of relief privileges. The plan adopted, however, in my judgment, does not make a direct and straightforward attack upon evils which may have been believed to exist. Its machinery is oblique and indirect. It substitutes for plainly enumerated offenses and stated penalties a program which depends for its coercive effectiveness upon a vagueness and imprecision which could have been avoided and which seems accordingly, unfair. Moreover, even assuming that the system is capable of achieving the objectives said to underlie it, it does so at a considerable price in terms of actual or threatened invasion of modesty and the ordinary amenities. Whatever may have been the purpose of the company, I do not feel that this constitutes a 'reasonable' rule." The Arbitrator held for the employees.

NEW



LOW

EM-BEE

A3

NEW Low Pouring Height

NEW Greaseless Agitator Motor

NEW Interchangeable Covers

NEW Stainless Steel Legs

NEW Dip-Stick In Bridge

PM

Distributorships available in some areas

PAUL MUELLER COMPANY

KANSAS AVENUE AT PHELPS • SPRINGFIELD, MISSOURI

Food Industries Lag in Use of Available Research Information

"THERE IS SURPRISINGLY little use of research and information facilities available from government, universities, and trade and professional associations." This is one of the startling facts uncovered by a careful study of 500 small business operations. Small business is not taking advantage of a most important opportunity. The firms studied employed from 50 to 1,500 people and involved four types of industries: textiles and apparels, electricity and electronics, metal fabrication and light manufacturing, and foods.

The study was made for the U. S. Department of Commerce's Office of Technical Services. The work was undertaken in connection with the President's Conference on Technical and Distribution Research for the Benefit of Small Business held in September. It was carried out by Herner, Meyer & Co. of Washington, D. C.

Each type of industry is most concerned with its own special problems. The question the study sought to answer was how do these industries solve the technical problems they face?

Most frequently, in all types of firms, the problem gets solved right in the plant through tests and experiments. When in-plant methods fail, small businessmen try one or all of three popular problem-solving methods: Take it to the supplier (frequently a big business); read the latest information in trade and technical journals; call in an outside consultant or consulting laboratory.

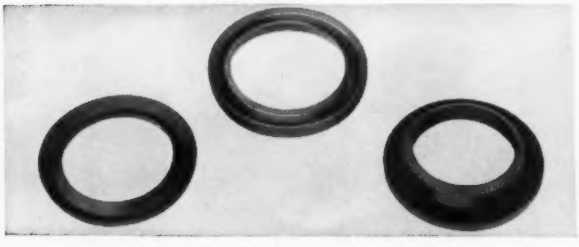
How well a firm can solve its problems within its own family seems tied to the number of "trained" or college persons on the staff. The electricity and electronics firms "scored" highest in the survey on almost all the aspects of problem solving. These firms averaged the highest number of college personnel – 12 per firm. Metal fabrication had nine per firm; foods and textiles each had three per firm.

All of the industries except textiles regularly used one or more trade or technical journals as their primary source of information on new developments. Textile men depended for such news on raw materials and equipment suppliers. The typical electrical and electronics firm, for example, subscribed to 12 such journals. The number for the average textile firm was four.

Electrical and metal fabrication firms had 75 books each in the plant. Throughout the survey the electricity people and the metal fabrications firms are the strongest seekers of new information. The electricity men issue the most staff bulletins in an effort to keep personnel abreast of new developments, are the greatest users of outside libraries and attend the greatest number of exhibitions and trade shows.

Plunger Packing

for Homogenizers and Viscolizers



Top grain leather and neoprene Plunger Packings . . . V type, U type and Hat type for all popular makes of Homogenizers and Viscolizers. Finest quality packings at reasonable prices. Ask your Dairy Jobber for E-MAC packings or write direct for samples and prices giving size and style. Jobber inquiries invited.

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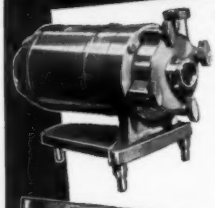
for the Processing Industries



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Complete newly designed line; either all stainless steel or nickel alloy. Smooth steady flow without churning or agitation. Simplified sanitary rotary seal — no glands. Improved impeller design with 4 position outlet. Quick easy disassembly. Also "Uni-Mount" Brine and Water Circulating Pumps in Iron, bronze, or stainless.

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THOMSEN "C-I-P" FITTINGS
Both Thomsen and Davis types. Most practical and sanitary for cleaned-in-place pipelines. Convert old lines and fittings by simple grooving operation. Thomsen C-I-P-VERTER converting machine available.

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For expanding 1" to 4" sanitary pipeline connections. Leak-proof joints, no welding.

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Improved mold and yeast resistance in your dairy product means longer keeping life. It means improved customer satisfaction, far fewer spoilage losses. Result . . . greater profit for you. All this is possible with CARBIDE's Sorbic.

Sorbic is unusually effective in many dairy products. It retards many molds and yeasts that are responsible for spoilage. Low concentrations of Sorbic are effective for long periods. It does not affect taste, odor or appearance at effective levels; it is digested in the same way as butter fat. And Sorbic is easy to use, easy to store.

Sorbic has already improved the keeping life of perishables such as cheese and cheese products, prepared fruits, vegetables and salads. Find out more about Sorbic. For sample and technical information, write Department B, Union Carbide Chemicals Company, 30 East 42nd Street, New York 17, N. Y.

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Division of Manton-Gaulin Mfg. Co., Inc.
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Million Miles No Accidents Wins National Award for Idaho Firm

WITH A SPARKLING record of more than a million miles without an accident, the Idaho Creameries Division of Beatrice Foods Company won the first place in the Wholesale Truck Division of the 26th annual National Fleet Safety Contest. Runner-up was the Rochester Dairy, Rochester, Minnesota.

Hugh Daley, fleet supervisor, Idaho Creameries Div. of Beatrice Foods Co., Boise, Idaho, is shown (right) accepting the National Safety Council's first place award for driver safety performance. The plaque is being presented by Chief E. G. Cox, of the Safety Section, Bureau of Motor Carriers.

The contest, sponsored by the National Safety Council, based the awards on the companies' safety record from July 1956 to June 1957. During that period, the 58 wholesale trucks of the Idaho Creameries Divisiou, Boise, operated 1,130,000 miles with no accidents. The Rochester Dairy fleet of 40 vehicles, meanwhile, operated 1,999,417 miles and achieved the outstanding record of only 29/100 accidents per 100,000 miles of operation.

Under contest rules, all accidents except those occurring when the company vehicle is properly parked, must be counted. Before winners are finally determined, their records are inspected by auditors appointed by the National Safety Council.

More than 2,000 fleets operating over 237,000 vehicles and traveling 5,078,743,000 miles competed in the nationwide contest. The combined average frequency rate of 1.51 accidents per 100,000 vehicle miles was down four per cent from the previous year.

The milk industry's average accident rate per 100,000 miles was 2.35 compared to the all-industry figure of 1.51.

Hugh Daley, fleet supervisor and director of safety for Idaho Creameries accepted the first place award plaque on behalf of his company. He attributed the firm's fleet record to the fact that "We have maintained a well-rounded safety program for several years, and all of us have become safety conscious, maintaining proper safety precautions as a regular part of our daily job routines."

In presenting awards to the more than 60 winners representing all branches of the motor transportation industry, E. G. Cox, chief of the section of safety, Bureau of Motor Carriers, Interstate Commerce Commission, congratulated the participants on steadily improving their safety record. The four per cent decrease in the accident rate was achieved in spite of an increase of half a billion vehicle miles. Mr. Cox termed the achievement a substantial contribution to the safety of our streets and highways.

Spectrophotometer graph showing fat particle break-up of milk as homogenizing pressures increase.
Calibrated in % of light transmission . . . 100% equals transmission through distilled water.

COMPARE!

Dyna-Jet Homogenizing Performance at any pressure

The Dyna-Jet Two-Stage Homogenizing Valve produces a distinctly superior fat particle break-up, regardless of operating pressures within the homogenizing range. Extensive field tests have consistently shown efficiency increases of 25% and even greater!

Let science provide the proof! Gaulin's Spectrophotometer research on fat particle break-up gives you a remarkable new insight on homogenizing valve performance — ask to see the difference.

Send for NEW Bulletin DJ-57. A complete story on Gaulin Homogenizers and High Pressure Pumps, and featuring the new Dyna-Jet. Write today, then compare all the facts.

Plus -- Gaulin Long-Life Design outlasts, outperforms other machines — with continuous high efficiency. Many Gaulins are still going strong after twenty-five years, without a major overhaul!

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World's Largest Manufacturers of Homogenizers, High Pressure Pumps and Colloid Mills

Sanitary Regulations as Trade Barriers

INSUFFICIENT PROGRESS in the unification and simplification of sanitary milk regulations is one of the principal reasons for the existence of some sanitary milk regulations that act in restraint of trade in the marketing of milk. This is the major theme of a paper by Dr. A. C. Dahlberg, Department of Dairy Industry, Cornell University, and presented at a joint session of the annual meeting of the New York State Association of Milk Sanitarians and the Cornell Dairy Industry Conference.

Dr. Dahlberg reports that there are many reasons for the failure to delete unnecessary sanitary regulations and for the addition of new ones.

Sanitary regulations that serve as trade barriers are found on both local and state levels. They come in different forms: they may be laws, ordinances, directives, or personal decisions and practices. One favorable influence in reducing trade barriers has been the general adoption of the ordinance recommended by the United States Public Health Service or of its principal features.

There is no question that worthy public health regulations do affect trade to some degree. The real question is whether the restriction to trade resulting from the sanitary regulation is justified as a public health measure.

Dr. Dahlberg asserts further that interpretation of sanitary laws is elastic and is affected by the practical possibilities of compliance. All regulations, for example, specify that dairy cows must be healthy. In earlier times "healthy" cows meant those not critically ill, even though tubercular cows were known to be in the herd. The milk supply would have been greatly reduced or eliminated if dairy herds had to be free of tuberculosis at that time. When it became practical to secure milk from herds free from tuberculosis, then healthy herds had to be free from this disease. Today we are beginning to enforce demands that the milk we drink comes from herds free of brucellosis. This is because programs for the eradication of brucellosis have been developed relatively recently.

Unnecessary Regulations

Some sanitary regulations specify certain practices not necessary or essential to the public health. For example, at one time New York required a milk house outside the barn. This is no longer necessary in New York. Dr. Dahlberg underlines the unreasonableness of the situation when he points out that there are still some cities that will not take milk from milk rooms *inside* the barn and other cities that will not take milk from milk houses *outside* the barn.

In some places bulk tanks on farms are required to have a mirror finish on stainless steel tanks. Since such finishes are rare, expensive and sanitarily insignificant, this requirement is an effective trade barrier temporarily for a chosen market.

Dr. Dahlberg used two examples to illustrate the use of sanitary regulations as trade barriers in the plant. One is the dating of bottles and containers, now vestigial, costly and unnecessary. The other is the classic restriction of the use of milk in a city to the milk which has been pasteurized and bottled within the corporate limits of the city. This occurs even when the quality and sanitary standards of milk from another city may be irreproachable.

Dr. Dahlberg says that while technological and sanitation advances have broadened the market for milk, the areas of uniform sanitary regulation have not kept pace. He sees some hope in the future, however, for ironing out the difficulties, usually found more on a local than a state level. Along these lines, Dr. Dahlberg asserts, "There is an urgent need for more states to establish uniform sanitation regulations, applicable to all local areas within the state."

New York, California, and Wisconsin have already done so or are in the process of so doing.

Regardless, Dr. Dahlberg points out that the local milk supply is usually best for milk quality, economy and public health control. Transportation costs usually would add to the cost of the imported milk, as shown by a USDA study, so that it would be economically unfeasible for milk to be moved from mid-west producing areas to population centers in the east.

"It is only by more active and vigorous cooperation to unify and simplify sanitary regulations that the rights of states to prescribe their own laws on the dairy industry can be preserved," concluded Dr. Dahlberg.

Fast Cooling . . .
Big Turnover . . .
More Storage . . .
CHOICE OF SLIDE OR LIFT LIDS
Model CA 48-S
Biggest capacity per cost available. "Top-cooling" assures larger interior. Models for up to 30 cases of 12 oz. or 45 cases of 6 oz. bottles.
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Is your marriage a success?

You'll say "yes", indignantly . . . and you've probably got "the best wife in the world".

But what about your chocolate drink . . . *how does your quality milk mate with the chocolate you're using?* A really "successful marriage" means you're putting out the best chocolate drink possible day after day . . . a certain result if you use top quality chocolate that's right for your equipment, and properly processed in your plant.

When you buy from Chocolate Products, you get just what you need . . . a syrup carefully tested for heating and cooling reactions, homogeneity, viscosity and flavor . . . or a chocolate powder for your exact requirements.

Remember, too, this chocolate is *priced right*, and delivered on time in containers of your choosing.

SYRUP USERS!

You save approximately 10% on freight, do away with return shipments of empty milk cans or drums...and save needed floor space with new Stillicious STILLTAINER. Carton holds 55 lbs., is easy to open, easily disposed of. Syrup pours from sanitary, protective polyethylene liner.

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DELICIOUS HOT OR COLD

CHOCOLATE PRODUCTS COMPANY

SPECIALISTS IN CHOCOLATE FOR MORE THAN 33 YEARS

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Net Profits Up for Borden, National Dairy and Foremost

IF ALL milk companies follow the lead of National Dairy Products Corp., Borden's and Foremost, 1957 should go out in a blaze of financial glory with sales and earnings at their all-time summits. All-time that is, until next year.

All three of the mammoth companies posted tremendous gains in the first nine months of 1957.

National Dairy's net earnings shot up 9.1 per cent in comparison with the same period in 1956. Its sales for the same period were up 6.9 per cent.

E. E. Stewart, president and chairman of the Board, attributed the increased earnings to more efficient operations resulting from the company's long range program of building new plants and modernizing other plants and equipment.

In dollars, net profit increased to $33,779,423 for the nine-month period this year as compared with $30,962,067 last year.

The Borden Company did $694,826,200 worth of sales in the first nine months of this year for a net income of $17,930,301 equal to $3.83 a share. In 1956, nine-month sales were $647,247,489 and earnings were $16,954,718 or $3.58 a share. This represents a substantial increase over 1956, according to President Harold W. Comfort.

Third quarter sales were $240,773,974 and net income was $6,528,181. For the third quarter in 1956, sales were $223,867,296 and net income was $6,241,523.

Foremost Sales Increase

Foremost, the youngest and fastest-growing dairy giant, showed a before-taxes operating profit increase of 12.6 per cent and an 8.7 per cent sales increase for the first nine months of 1957. Consolidated net sales of Foremost Dairies, Inc. and subsidiaries, for the nine months ended September 30 amounted to $310,249,845 as against $285,480,306 for the comparable period in 1956.

Consolidated net income, after federal and state taxes on income and all charges, for the nine months of 1957 was $8,465,317, including non-operating income of $1,299,460.

Fourth quarter prospects are encouraging and year-end sales and pre-tax profits should exceed those of any previous 12-month period in the company's history, according to Grover D. Turnbow, president, and Paul E. Reinhold, chairman of the board.

●

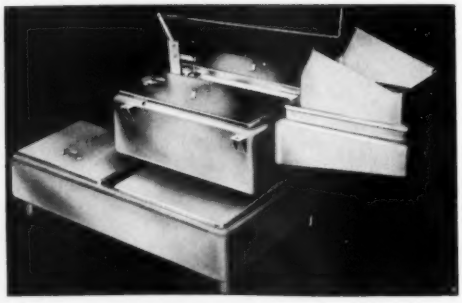
MILK BUSINESS FUTURE BRIGHT, SAY TWO EXPERTS

As seen through the eyes of two authorities in different parts of the country, the dairy industry's future appears bright, indeed. Ben E. Goodale, head of the Dairy Department of Clemson College, Clemson, South Carolina, in fact predicts a "spectacular future" for dairy herds, processing of

Saucier

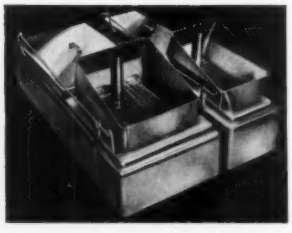
COMBINATION WEIGH CAN AND DUMP TANK

Single compartment weigh can with 750 lbs. capacity and single compartment dump tank with 900 lbs. capacity. SAUCIER offers a complete line of styles and sizes for regular or "Grade A" milk. Write for details of these and other models.

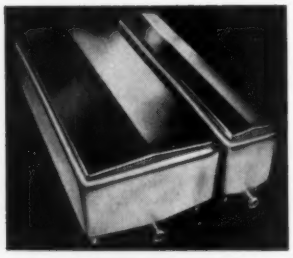


Saucier Stainless Steel DUMP TANKS-WEIGH CANS

(FOR GRADE "A" MILK)



Two compartment weigh can with 750 lbs. capacity for "Grade A" milk.



Two compartment dump tank with 1,000 lbs. capacity for "Grade A" milk.

Fluid milk consumption is increasing more rapidly than production in the heavily populated areas, and milk dealers in those areas are going farther afield for their milk supplies.

They require and demand GRADE A milk. Grade A regulations are spreading rapidly from state to state.

Your production starts *in the receiving room* with weigh cans and dump tanks. Install SAUCIER weigh cans and dump tanks for greatest efficiency and lowest costs, custom built for your individual needs, but available at standard prices. SAUCIER weigh cans and dump tanks meet all Grade A and sanitary regulations.

SAUCIER products are made with extra fine craftsmanship and attention to detail, and incorporate all the most modern features such as easy and accurate sampling, and Saucier's exclusive Canadian type self-centering valve. Call your dairy supply distributor for complete information and prices, or write

Chas. Saucier & Son, Inc.

Custom Built Stainless Steel Dairy Equipment

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DISTRIBUTORS

Territories are open for dairy supply distributors. Write for complete information today.

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ESTABLISHED 1902

STAINLESS STEEL PRODUCTS

MINNEAPOLIS, MINNESOTA

milk and the milk container industries. In New York, State Agriculture Commissioner Daniel J. Carey predicted a new period of "reasonable prosperity" for New York milk producers.

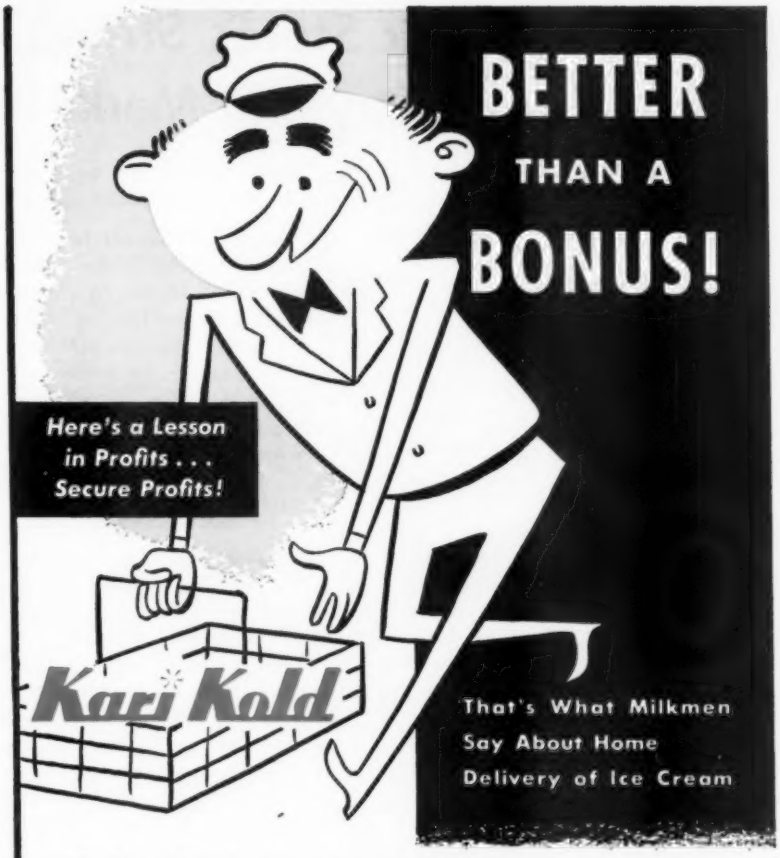
Citing scientific developments at Clemson and other agricultural research centers, Goodale envisioned plastic, disposable milk cartons; gaily colored milk; and sterilized milk processing, by which milk, tasting like fresh milk, would be sold in cans and kept indefinitely. He foresaw the discarding of the milk can for methods by which milk will not touch the air before it is opened in the house.

Other developments foreseeable by dairy experts, according to Goodale, are moveable electric fences—now in use in New Zealand, Germany and Russia; the use of Cobalt 60 and other radioactive isotopes in producing completely sterile canned milk; and Grade A concentrated milk on a three-to-one milk to moisture basis.

Of more immediate interest, Goodale declared, "There will be more and better dairy equipment and barns, more use of pipelines to milk cooling plants."

"All I got to do is spill a drop of milk, turn around, and there's the boss. I bet if I run over that can—"

Commissioner Carey, addressing the National Silo Manufacturers Convention, asserted, "If we can maintain the gains we have made this year and continue to build on this foundation, I am sure that after our farmers have had an opportunity to dig out of the price squeeze they have recently been encountering they will again enjoy a period of reasonable prosperity. In addition, we have aggressive programs of disease control for our herds which too are paying off."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Here's a Lesson in Profits . . . Secure Profits!
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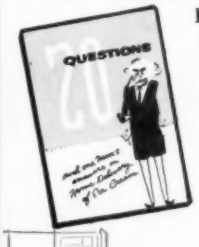
That's What Milkmen Say About Home Delivery of Ice Cream

Wondering how your routemen would feel about ice cream delivery? Here's what the drivers at one Kari-Kold equipped dairy report: "It means a bigger paycheck!"—"I can sell extra products because I must meet the customer to deliver ice cream!"—"I'm getting new customers. Housewives like this extra service!"

Your drivers will be equally enthusiastic when you show them how Kari-Kold can mean *more sales* and *more take-home pay* for them.



Kari-Kold shows you how it's done in a complete and factual booklet that covers most all the questions any management must face in making a major decision on increasing sales volume and profits.

GET THIS INFORMATIVE BOOKLET TODAY!

It's yours—FREE—courtesy of Kari-Kold . . .

Kari-Kold 219 Scribner Ave., N.W. • Grand Rapids 4, Mich.

Gallon Jug Milk Stores Strong In Ohio and Maryland Markets

HIGH'S DAIRY PRODUCTS CORPORATION of Washington, D. C. opened its one hundredth dairy store on October 25. Patterned after the famed Lawson Milk Company cash and carry, gallon jug stores of Akron, Ohio, High's reached the hundred mark after a spectacular two and a half years' growth. High's announcement coupled with the Lawson Milk Company's plan for extensive coverage of the Cleveland market pushes this type of distribution to a new peak.

According to C. Y. Stephens, president of High's Dairy Products, the company is offering Grade A homogenized, Vitamin - D milk in its Washington, D. C. and Baltimore stores at 82 cents a gallon, which is 30 cents a gallon under the home delivered price. High's also has stores in Virginia but the price there is higher due to the resale price regulations of the Virginia Milk Control Commission. Mr. Stephens has been a vigorous opponent of the resale price ceiling.

The opening of the one hundredth store was announced to the press in a news release issued by Norman Malone Associates, Inc. of Akron, Ohio. This firm handles advertising and public relations for several other cash and carry gallon jug milk stores including the Lawson Milk Company and Norwood's Inc. of Springfield, Mass.

Public Relations

The Malone firm has developed a technique which is apparently very effective. Basic element in the technique is to identify the gallon jug stores with low prices, free enterprise, the public interest, and fair play. The news release on High's one hundredth store, for example, describes the gallon jug as "the symbol of free enterprise in the milk industry . . ." The release declares that consumption of fluid milk started climbing with the introduction of the gallon jug and that "With the rise in fluid milk consumption dairy farmers are selling more milk at a greater profit because they receive the highest price for milk used by the consumer in fluid form. As more milk is sold for table use, there is less left as 'surplus milk' which the government has to buy, powder, and store away at taxpayers' expense."

This aggressive, emotionally charged type of publicity is characteristic of the gallon jug operations. It makes excellent newspaper copy, and is, therefore, highly successful in competition for newspaper space.

Growth of High's gallon jug business has been at an accelerating rate. The ten millionth gallon was sold last April, two years after the first store was opened. Mr. Stephens predicts that the twenty millionth jug will be sold long before another two years rolls by.

Opening of the one hundredth store was marked by a special celebration. All of the stores in the High system offered merchandising specials.

A Complete Line of Approved Can Fillers

Fort Wayne Air Operated Can Filler
Quick, Accurate Filling for All Size Cans

50 Years Service to the Dairy Industry

The Hydro Can Filler
Water Operated — For 5 Gallon and Smaller Cans

The Barrett Can Filler
For Filling All Dairy Products

Consult Your Jobber or Write to

Fort Wayne Dairy Equipment Co.
Box 269
FORT WAYNE, INDIANA

ADA SPONSORS THREE NEW RESEARCH PROJECTS

The American Dairy Association is sponsoring three new research projects – two to study the feed flavors in milk and one to study the effect of moderate and low-fat weight control diets on persons between the ages of 40 and 60.

One of the milk-flavor studies will test the effectiveness of vacuum processing for eliminating weed and feed flavors from milk. It is being conducted by A. W. Rudnick, Jr., and T. R. Freeman at the University of Kentucky.

The other milk-flavor study will examine the chemical and physical properties of compounds responsible for feed flavors in milk, in an effort to find a means to eliminate these flavors. It is being conducted by Dr. W. M. Roberts of the University of North Carolina.

The low-fat diet study, being carried out by Dr. Robert E. Olson at the University of Pittsburgh, is part of a larger project on weight control diets at the Falk Clinic. It will stress the effect of weight reduction on cholesterol levels when dairy products make up a significant part of the diet.

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PER CAPITA USE OF MILK UP 4th YEAR IN A ROW

(Continued from Page 34)

capita consumption of cottage cheese has almost doubled. It has jumped from 2.9 pounds in 1946 to 4.9 pounds in 1956. Indeed, a half-pound increase was recorded in 1956 over 1955, the biggest peace-time surge on the books.

The report forecasts another record year of milk production in 1958 and anticipates a somewhat better return for farmers due to an improved milk-feed ratio. Number of farms and number of cows are expected to continue their decline but production per cow will probably increase.

For fluid milk distributors, the prospect is one of some slight price increase for their product in the next few years accompanied by wider gross margins. However, the potential changes in consumer tastes will undoubtedly place a greater demand on the sales force than ever before. It looks like a horse race with fluid milk a favorite.

full figure PRINTED WEIGHTS to 99,990 lbs. with TOLEDO truck scales!

Toledo Printweigh is now available on all Toledo Hi-Weigh Truck Scales . . . provides full figure printing for each 10 pounds from zero up to 50 tons! Records weights on tickets, strips or sheets. Avoids human errors. Big range of sizes to 60 feet. Two section, four section and axle load models. Ask your local Toledo office about them, or write for bulletin 2417. Toledo Scale Company, Toledo 13, Ohio.

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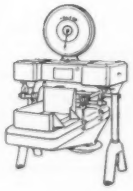
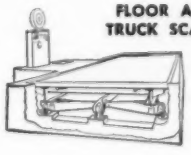


RECEIVING SCALES



FLOOR AND TRUCK SCALES

BENCH AND PORTABLE SCALES

SOME FUNDAMENTALS OF ORGANIZATION

(Continued from Page 60)

experience with the Company; he's done a wonderful job for me; and he's due for a promotion. What do you think, Jack?

PRODUCTION MANAGER: I think Johnny would be an excellent choice. Still, with all respect to you, George, I'm not convinced an Intelligence Section should come under Sales – or Production either, for that matter. My thought is that it should come directly under Mr. Capitano as an advisory section. In that way the man would be free to do his job without getting involved with departmental responsibilities.

GENERAL MANAGER: You are right in that, Jack. If you are willing to give up Johnny, George, he would be ideal.

PERSONNEL MANAGER: I think so too. He's going to have a tough job, though, building a really useful section from scratch. I don't think own without some help. At least he we should throw him entirely on should have a job description t him know both what is and wh not expected of him.

ADVERTISING MANAG Why can't each one of us outlin idea of what the job should be list for our own department the of information that would be useful. Then the whole thing ca boiled down by Joe and Mr. Capi as a Policy Note.

MAINTENANCE MANAG That's a good idea, Ivan. It woul a help to me to know what I c expect from this Intelligence Sect

GENERAL MANAGER: I like suggestion, Ivan. Well, men we have a business to run and we'll h to adjourn. I feel we've really acc plished something this morning. is an unconventional idea; I've heard of it being tried in any ot dairy. Still, I believe it will help keep us all in line with every n situation and thus keep us more cient. It will probably make us ligh on our feet in meeting competition well. Sometime before the end the week I'd like to get your su gested Job Descriptions. In the mea time, George, have a talk with John and then send him over to see m will you?

●

STEAM INJECTION SYSTEMS

(Continued from Page 50)

sult of the loss in carbon dioxi (CO_2) during heating and vacuu treatment.

(4) *Other products*

Fluid cream (8), chocolate milk (1 and ice cream mix (7) have been pr cessed in the Vacreator with goo results. Where volatile flavors we present in the dairy ingredients, th flavor of the finished products we improved greatly.

When fluid cream products we pasteurized with the Vacreator, ther was a reduction in viscosity whe compared with H.T.S.T. pasteurizatio (Table 1). There was no importan difference in whipping ability, feather ing, cream plug or serum layer.

Acceptable chocolate milk has bee made with the steam deodorizing treat ment. The volatile flavors and aroma such as vanilla are removed during the process. However, this does no seem to be extremely serious. Some adjustment must be made in the

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ount of stabilizing material to get correct balance between viscosity d non-settling.

Time will not allow for a dis- ssion of results obtained by vac- tion of ice cream mix. A review some of the recent work has been esented by Roberts (7). Suffice it say that ice cream processed by is method compares very favorably body and texture scores with that ade by vat or plate methods. When ed flavors are present, vacreation has nsiderable advantage over conven- nal methods of pasteurization. hile little information is available the effect of the other deodorizing uipment on some of these prod- ts, there is no reason why results nilar to those found with fluid milk ould not be obtained.

Summary

1. Conventional methods of feed flavor control such as grading on the platform and pasture and feed management practices have not been entirely satisfactory. They have resulted in excessive cost to the farmer for rejected milk and prevented him from using low cost feed. The consumer has continued to get feed flavored milk that reduced sales
2. While the use of this equipment will increase the cost of operation to the dairy plant, this should be more than offset by increased sales and consumer good will because it will reduce and in most instances eliminate feed flavors. Also, producer relations should improve.
3. The deodorizers more appropriately should be called "flavor standardizers" because they do result in a uniformity of flavor day after day that does not appear possible by any other means. Standardization of the fine flavor of fluid milk products is the most important way whereby the consumer can buy with confidence and the sales of these products be increased.
4. Sufficient information and controls are available at the present time so that the dairy industry and regulatory agencies can proceed with the use of flavor standardizers in dairy plants.

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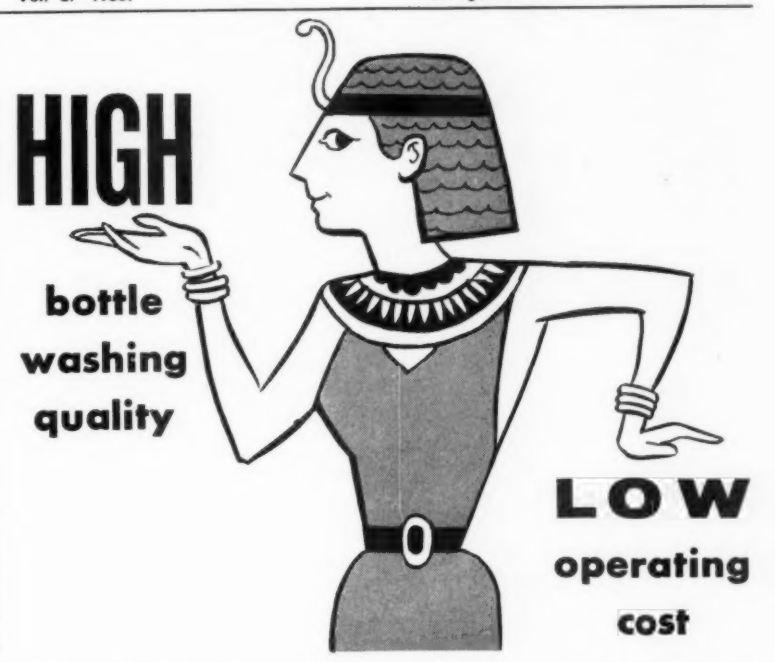
* Presented at the New York State Association of Milk Sanitarians Thirty-fourth Annual Conference and Fifth Joint Conference with the 13th Dairy Industry Conference, Cornell University.



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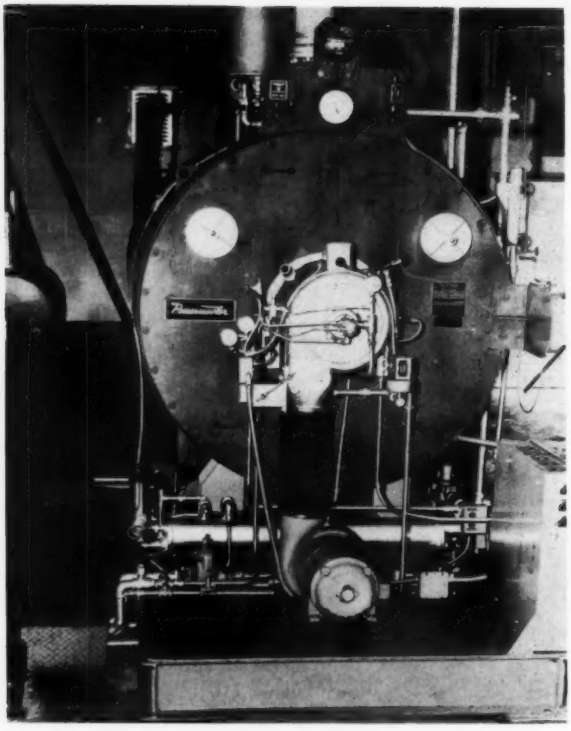

Oak Tree Farm's new boiler provides plenty of heat for all purposes.

Oil Change Saves Dairy $5,500 a Year

By HERBERT SAAL

A CLEAR SAVING of $467.50 a month in fuel costs is the startling record of Oak Tree Farm Dairy, East Northport, New York. Major reason for the economy is a switch from No. 2 fuel oil to the lower-priced No. 6 fuel oil to fire the boiler. The switch was made possible by the installation of a new boiler unit that could burn No. 6 oil. Fuel costs declined from $907.50 a month to $440.00 a month, which is a nice difference to have in any milk business.

The need for new steam-producing facilities as a result of the firm's rapid expansion was pretty obvious. In a short three-year period, the dairy had tripled production to 50,000 quarts a day, seven days a week.

The old boiler just could not stand the pressure. Because of frequent breakdowns, intricate controls that could be handled only by a few people and lack of uniform pressure and temperature, the old boiler was beginning to pose a real economic hazard to Oak Tree Farm Dairy. It had become expensive to operate and maintain. It used only the most costly kind of fuel oil. It also created the kind of discomfiture in management that comes from knowing you have a piece of equipment that may give out at any moment, occasioning expensive hours of delay with high-priced drivers and plant personnel standing around and the milk getting older every minute.

There was a pressure variation range between 30 PSI and 60 PSI constantly during the day. Safety controls at times failed to give proper insurance making necessary costly repairs to brick work and fire tubes as well as to other electric components. It was for these reasons that Dieter Cosman and Arthur Berger, top management at Oak Tree Farms, concluded they needed a new package boiler. But what kind?

Martin Stam, plant engineer at Oak Tree Farm, says: "Steam demands in the dairy industry are extremely varied. From minute to minute large amounts of live steam are being used, most of it in direct injection and cleaning purposes.

"Our particular operation requires surges from 20 h.p. to 100 h.p. within minutes, many times during the day. Steam is needed for bottle washing, can washing, pasteurization, dairy hot water heaters, case washing and plant and office heating units. In addition to the required surges, it is important at the same time to maintain a pressure level so as not to influence the highly sensitive pasteurizing process."

A list of requirements was drawn up. They included:

1. Full modulating range.
2. Full automatic operation.
3. Simple controls, easily handled by inexperienced help.
4. Complete safety control leaving no chance of human error.
5. Sufficient horsepower to accommodate future expansion.
6. Space and installation problems such as oil storage and stack installation.
7. Minimum of maintenance.

Further requirements from the managements point of view were that efficiency had to be high, fuel had to be flexible in order to take advantage of price shifts or availability and, finally, any unit chosen would have to give full-time service.

"Taking all the foregoing considerations into account and discussing our problems with many package unit manufacturers, we decided upon a 125 h.p. Number 6 fuel oil-fired, high pressure, marine type, Scotch boiler,*" says Mr. Stam.

After a year of operation, Mr. Stam reports that the unit is performing up to all of the specifications. "Main-

*Mr. Stam says that there are at least a half a dozen, if not more, good package boilers on the market. The one selected at Oak Tree Farms is called the Powermaster. It is made by Orr and Sembower, Inc., of Reading, Pennsylvania.

tenance has been held to approximately five hours a week including daily testing, blowing down and adding chemicals to the water and fireside."

To test the unit further, Mr. Stam devised an accurate fuel metering system, installed a water meter between the feed pump and the boiler and for two consecutive periods of 10 days each tested the unit under actual operating conditions. These conditions are: The plant processes 16 hours daily. During this period, 70 PSI of steam are maintained. At the same time, the unit is in full modulation control. Even during the most intensive surges of steam demand, the actual pressure never varies more than one pound per square inch either way. The other eight hours, the unit operates in a cycling range of 20 to 25 PSI to maintain sufficient heat in the building.

On the basis of these tests, Mr. Stam told *American Milk Review* that the boiler unit has an extremely high level of efficiency.

"Besides a fuel saving of $5,500 annually, the greatly increased boiler efficiency has improved our processing

Martin Stam, Plant Engineer, ran own tests.

considerably and sped up our production. Over-all processing time has been reduced by six per cent. After a year of day-in, day-out operation, no cleaning of this unit has been necessary and until this date the average stack temperature has risen only three per cent above the day of starting.

"The package unit has proven itself in this plant," concludes Mr. Stam. "It will pay for itself in two years in fuel savings."

He calls it the "heart" of the plant, for if the boiler is shut down for any period of time, the results can be disastrous to the dairy. This is especially true in a high-speed, high-volume plant.

In addition to providing milk for 18 trucks of its own, Oak Tree Farm Dairy also supplies three sub-dealers – King's Dairy, Rivington Dairy and Brangle Brink Dairy.

When savings in plant operating costs are translated into terms of new business equivalent, their virtue becomes spectacularly apparent. More important than the savings, however, is the good management that these efficiencies express. Oak Tree Farms is no exception. This episode of the boiler is management at its best. The problem was recognized, studied, defined, solved, and checked on the basis of the best available information. Indeed, in some areas where information was not available, the people at Oak Tree developed their own through tests and study. This, we submit, is the way good management should operate.

Season's Greetings

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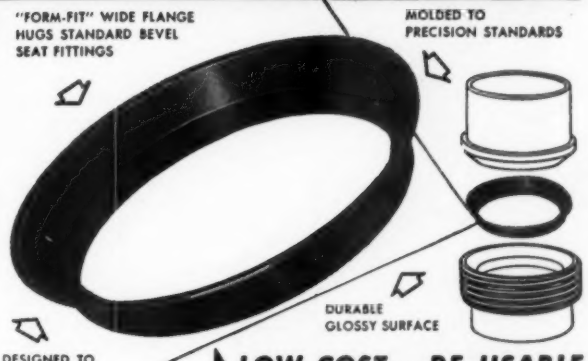
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From the State Capitols

By BETHUNE JONES

- **Arizona Permits Raw Milk Sale**
- **Iowa Farmers Get Fair Milk Price**
- **Court Stops Price War in Topeka**

ARIZONA:

Quirk in Law Permits Sale of Raw Milk, Says Attorney

In a move expected to set the stage for court test of the validity of an Arizona law banning the sale of raw milk, State Attorney General Robert Morrison directed State Dairy Commissioner W. W. Cole to notify two dairies their licenses would not be renewed in January.

One dairy in Tucson and another in Mesa reportedly were selling raw milk. The attorney general made his recommendation after the Pima County attorney's office refused to take action to prevent raw milk sales.

Arizona's legislature in 1956 adopted the U. S. Public Health Service milk code, outlawing the sale of unpasteurized milk in Arizona after July 15, 1957. This measure was intended to curb the spread of diseases which could be carried by raw milk.

The Pima County attorney's office held, however, the legislature failed to repeal a statute which permits sale of raw milk, and the new milk code and the earlier law permitting raw milk sales were, in effect, passed at the same time.

●

OHIO:

Agriculture Director Proposes Farm Marketing Program

State Agriculture Director James R. Hay outlined a proposed new policy under which the state would officially promote Ohio farm produce.

In addressing the Cleveland Farmers' Club, Dr. Hay said he would ask the next session of the Ohio legislature for an appropriation to help publicize Ohio agricultural products.

"Ohio is one of the few states in the Union without a farm promotion program," he said. "If Wisconsin can promote cheese, why can't Ohio promote the finest Swiss cheese made in the United States?"

●

IOWA:

Farmers Getting Fair Price for Raw Milk, Says Official

Iowa's Department of Agriculture reported that farmers generally are getting a fair price for the products they sell to Iowa creameries and cheese factories.

The department's announcement was made following the completion of a three-month check of the accuracy of measuring butterfat content, the basis on which farmers are paid for milk and cream, at 302 creameries and cheese plants.

State Agricultural Secretary Clyde Spry said that of 2,170 samples spot-tested, only 23 were inaccurate "beyond tolerance."

The department said a decrease of 49 creameries in southern Iowa during the past 10 years resulted primarily from the fact that farmers are switching from cream to whole milk operations.

Spry said the drop was less noticeable in northern Iowa due to the consolidation of creameries.

●

NEW HAMPSHIRE:

Milk Control Law Reviewed

New Hampshire's State Milk Control Board held a public hearing Nov. 19 for the purpose of receiving testimony on a variety of proposals which might lead to changes in the state milk control law.

Board Chairman Maurice G. Chase

said the board at the hearing received evidence on the following topics:

1. Class I and II pricing formula for payments to producers.

2. Prices charged consumers and others for milk by distributors for (a) home delivery, (b) over-the-counter sales, (c) multiple quart containers, and (d) quantity discounts.

3. To review regulations relating to sales to institutions so that more non-profit institutions may be included.

4. To review the present policy so that resale price changes will be made only at the full cent level instead of the present half-cent level.

5. To review regulations pertaining to fair trade practices within the industry.

●

KANSAS:

Court Halts Topeka Price War

A milk price war in Topeka, Kan., was brought to a halt when the Shawnee County District Court issued restraining orders against 10 companies and a truck driver for one of the firms making it unlawful for any of the defendants to sell milk for "less than cost at the point of delivery."

The petition for the injunction was filed on behalf of three Topeka dairymen, Charles M. Boyles, John R. Hiller and Tom Shannon.

Named defendants were A & P Stores, the Fleming Co., Safeway Stores, Inc., Adams Dairy, Beatrice Foods, DeCoursey Tastemark Dairy Co., Milk Producers' Marketing Co. of Kansas City, Central Kansas Co-op Creamery of Hillsboro, Fairmont Foods of Concordia and Edward Johnson of Topeka.

●

WYOMING:

Brucellosis Requirements Revised

Wyoming State Veterinarian G. H. Good announced that the State Livestock and Sanitary Board has revised its requirements in an effort to increase the number of areas in the state that can be certified as free from brucellosis.

The new rules require 51 per cent or more of the livestock owners holding 75 per cent or more of the cattle in the area to petition for brucellosis-free certification.

The old regulation called for petition by at least 75 per cent of the stockmen holding at least 95 per cent of the cattle.

The smallest area accepted for certification is a county.

●

MONTANA:

Plan Suit to Test Quantity Discount Provisions

A resolution calling for a court test of the authority of the Montana Milk Control Board to fix retail prices allowing "quantity discounts" was adopted by the Montana Milk Producers Association at its conference in Helena.

The attorney retained by the association, Charles V. Huppe, said that suit would be filed in Billings, Montana, where new retail milk prices, fixed by the state board, went into effect Nov. 15.

Huppe said that the suit would "test the legality of the board to establish quantity discounts where they involve quart prices in excess of twice the price paid the producer."

He explained that state law fixes the maximum retail price at twice that paid producers.

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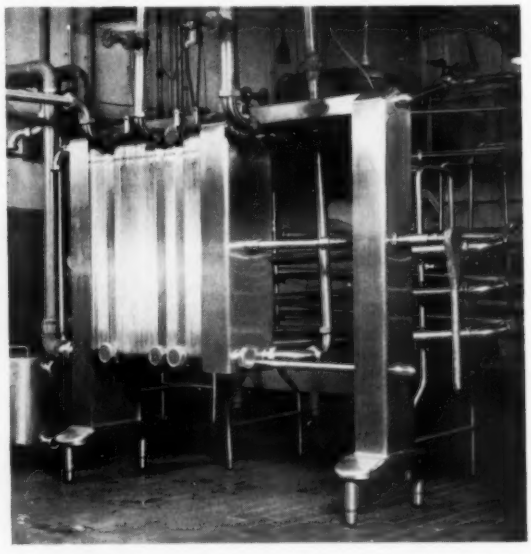
CHESTER-JENSEN BUYS YORK HEAT EXCHANGER

All rights to the heat exchanger manufactured by the York Corporation, York, Penna., a subsidiary of the Borg-Warner Corporation, have been purchased by the Chester-Jensen Company, Inc., Chester, Penna.

The purchase includes not only manufacturing and sales rights but also the tools, dies and fixtures that have been used in its manufacture, together with existing inventory, including finished and unfinished machines and parts.

The York Corporation will continue its interest in the dairy business with its refrigeration and air conditioning equipment.

Present and prospective users of the Plate Heat Exchangers are assured that Chester-Jensen will continue to maintain and even improve the position of this equipment in its field. The development program in progress at York will be continued at Chester-Jensen. The Plate



York Heat Exchanger, the manufacturing rights of which have been purchased by Chester-Jensen Co.

Heat Exchanger will continue to be built under its own name in three frame sizes having capacities up to 30,000 pounds of milk per hour when operated as high-temperature short-time pasteurizers. Capacities are considerably higher when the units are operated as heaters or coolers.

York was one of the original heat exchangers and high-temperature, short-time pasteurizers, having been placed on the market in 1927. Thousands of these York units have been installed in American dairy plants since that time.

In keeping with company policy to stick to refrigeration and air conditioning machinery, York began to divest itself of its dairy manufacturing equipment lines about 15 years ago. The Plate Heat Exchanger was

the last to go. In Chester-Jensen, it has found a roost where all equipment manufactured is dairy processing equipment.

For further information about the Plate Heat Exchanger, write Chester-Jensen Company, Inc., Fifth & Tilghman Street, Chester, Penna.

●

HEALTH ASSOCIATION PLAN TO REPLACE REGULATIONS DRAWS FIRE

The American Public Health Association is initiating a long-range technical development program "to provide leadership, stimulation and guidance to governmental and voluntary agencies in facing health problems of the nuclear age. In some important areas of public health, methods and standards have remained virtually unchanged since the horse-and-buggy era," according to Reginald M. Atwater, executive secretary.

Initial concentration will be in eight areas: radiological health, accident prevention, mental health, chronic disease and rehabilitation, child health, environmental health, medical care administration and public health administration.

A committee of experts in each area will develop policy statements, write operating manuals, conduct field studies, surveys and demonstrations, and consult with state and local health authorities and agencies.

A leading official in the public health administration field takes issue with the plan. He prefers to remain anonymous. His contention is that the rules should be changed, if at all, at a slow and measured pace rather than with the shotgun approach apparently advocated by the APHA. He had misgivings that the funds for such projects would be drawn away from proven programs, such as milk sanitation, and that the milk sanitation program would suffer thereby.

●

TURKEY RED OIL (NOPCO) CELEBRATES 50TH YEAR

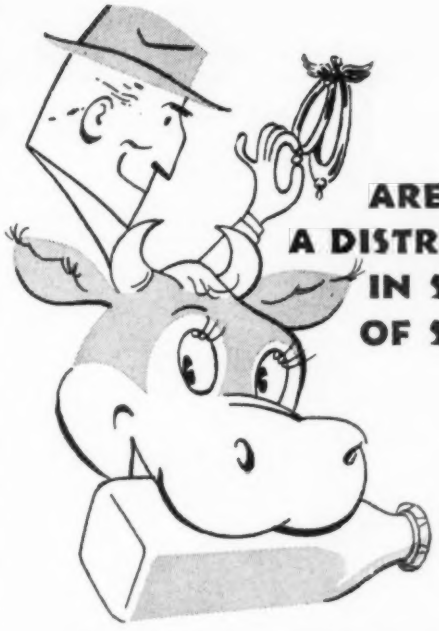
Nopco Chemical Company, more familiarly known to the dairy industry through its Vitex Laboratories, reached its 50th milestone in October. It celebrated by paying stockholders its 109th consecutive dividend.

The company began as the Turkey Red Oil Company of Newark, New Jersey, when Charles P. Gulick and Arthur Philips bought it for $1,000 and started making Alizarine Assistant (sulphonated corn oil) and Turkey Red Oil (sulphonated castor oil).

Over the years Nopco developed sulphonated oils for use in different industries. In the course of expansion, the company began using quantities of cod oil that flowed through the sulphonating processes and out into the leather industry.

In 1926, the connection between cod liver oil and vitamins began to receive wide attention when the USDA pointed out that cod liver oil was an important source of vitamins A and D.

In 1931, Dr. Theodore F. Zucker of Columbia University discovered a method of extracting vitamin D from cod liver oil and concentrating it. He gave the



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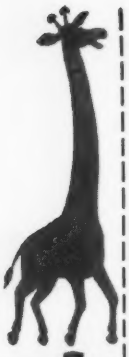

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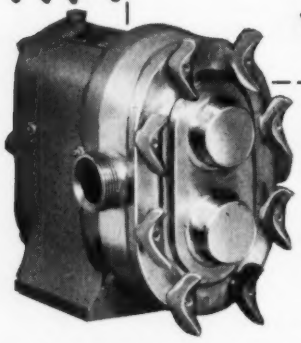

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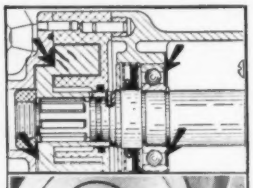
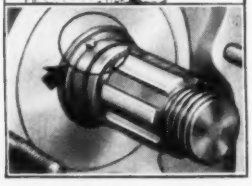
Both metallurgically and mechanically, Waukesha P.D. Sanitary Pumps are designed specifically to meet the rigid demands of Sanitary regulations in pumping food and dairy products under virtually all conditions of head pressures and temperatures. The Waukesha Metals used are the result of over a quarter century of pioneering completely sanitary, easily cleaned sanitary pumps. And, mechanically, there are at least *eighteen* reasons for the longer service and lowest maintenance already proved in the food, beverage and dairy industries.

These "reasons" include such important factors as positive sealing with Twin O-Rings, better load-balance between shafts and heavy duty bearings, larger, stronger shafts, more and huskier splines — for greater rigidity, less wear — and newly designed twin blade impellers for better distribution of the load factor at all speeds and pressures. There are many more new features you'll want to know about.



This drawing shows the close position between the heavy duty ball bearings and the corrosion-resistant impellers — for reduced shaft-slap and wear.



Larger diameter shafts, more and larger splines, plus a new stainless steel shaft seal with positioning pin, assure greater rigidity to impellers and longer service.

This new WAUKESHA 1957 Catalog gives you the whole story. Write for your copy, telling us what product you handle . . . Just a postcard will do.

*Positive Displacement

A-3

ONLY Waukesha gives you a quarter century's experience and reliability

Waukesha FOUNDRY COMPANY

DEPT. D-12, WAUKESHA, WISCONSIN

patent to Columbia, which chose Nopco as the logical company to develop the process further, produce and distribute Vitamin D. Nopco was made sole licensee under the patent.

In the Zucker extraction, the natural vitamin D is removed from cod liver oil, leaving the unpleasant taste, color and texture behind. The bland vitamin D oil is a fortification for foods, especially milk. In milk it creates high phosphorous and calcium availability.

Rigid federal, state and local laws retarded the growth of milk fortification. This obstacle was overcome, however, and vitamin D fortification of milk began in 1932 at the W. J. Kennedy Company, Detroit, Michigan.

Vitamin D is no longer the sole star in the Vitex galaxy. Now Vitex is selling dairies on the dietary and cost advantages of multi-vitamin milk. It has substances such as vitamin A and D, is fortified with three members of the vitamin B complex; niacin, thiamine and riboflavin; and two essential minerals, iron and iodine.

For 25 years Vitex has supplied vitamin fortifications for milk. Vitex does not stop there: it has developed and assisted in campaigns that have enabled dairies to convert from 70 to 85 per cent of their retail customers to multi-vitamin milk.

●

GIRTON STARTS HOUSE ORGAN

The Girton Manufacturing Company has inaugurated publication of the Girton News, a tabloid-sized, slick paper, telling a "little of this and that, items about your dairying neighbors," according to Paul K. Girton, president.

"We make such a wide range of equipment for the dairy that it is sometimes difficult to keep our friends informed that we are the source for something they need," Mr. Girton says. The Girton News should go a long way toward overcoming that difficulty. It is well-written and copiously illustrated.

●

22 EXECUTIVES COMPLETE M.I.F. SALES COURSE

Twenty-two officials of milk companies were graduated from the fifty-seventh session of the Sales Training Institute of the Milk Industry Foundation. This brings the total number of graduates to 1,054 since the Institute began six years ago, according to Thomas W. Douglas, MIF educational director.

The officials who received their diplomas today are: Richard Aubuchon, Quality Dairy Co., St. Louis, Mo.; Ned Baker, W. B. Baker & Sons, Birmingham, Ala.; Marion F. Bates, Sealtest Southern Dairies, Richmond, Va.; Geo. L. Benjamin, Dairymen's League Co-Operative Association, Inc., Auburn, N. Y.; John E. Clarke. The Borden Co., Ltd., Toronto, Ont., Can.; William L. Crosby, Crowley's Milk Co., Newburgh, N. Y.; Dean A. Deines, Roberts Dairy, Omaha, Nebr.; Francis W. Flynn, Green Valley Farms, Haddonfield, N. J.; Vernon H. Frisbie, Toll Gate Dairy Farms, Inc., Litchfield, Conn.; Garland Gilbert, Quality Dairy Company, St. Louis, Mo.; Robert

L. Halsey, Carnation Company, Webster City, Iowa; Grant G. Harlacher, East End Dairy, Harrisburg, Penna.; Paul A. Henline, Menzie Dairy Co., McKeesport, Penna.; James T. Hughes, Carnation Company, Tulsa, Okla.; William R. Kiser, Coble Dairy Prod. Co., Inc., Lexington, N. C.; James E. McKiernan, Bancroft Dairy Co., Madison, Wis.; Bill R. Minor, W. B. Baker & Sons, Birmingham, Ala.; Merle F. Mullins, Sutter's Pure Milk Co., Marion, Ind.; R. D. Noelker, Quality Dairy Co., St. Louis, Mo.; James Snider, Senn-Soldwedel, Inc., Canton, Ill.; David R. Tennessen, The Borden Co., Racine, Wis.; Robert Vernon, Tripson's Dairy, Vero Beach, Fla.

●

Harold J. Barnum, (right) was named Sanitarian of the Year at the annual convention of the International Association of Milk and Food Sanitarians. Congratulating him are Fred C. Baselt (center), himself an award winner, and Dr. I. E. Parkin (left), Pennsylvania State University, who presented the awards. Mr. Barnum was recognized for the work he has done as milk sanitarian in Denver, Colorado.

●

PURE-PAK PRODUCES ANOTHER FILM PROMOTING MILK

Another full-color film, 15 minutes long, called "For God and My Country," has been produced by the Ex-Cell-O Corporation as part of its continuing program to foster and bolster public good will toward the American dairy industry. The Pure-Pak Division of the corporation has earned recognition from all quarters and especially from the dairy industry for the outstanding institutional promotion job it has been doing for the industry.

"For God and My Country" is a dramatically graphic report of the Boy Scout Jamboree, the national convention of scouting that brought the following words of praise from Amos R. Shields, scout executive: "As a documentary picture of the Jamboree, in my opinion, it's tops! It captures all the color, activity and boy interest. It is certainly well done."

Other film efforts by Pure-Pak promoting the milk business include "Crisis," which dealt with how dairies can cooperate with civil defense in times of disaster; "The New Story of Milk," showing the progress and service-mindedness of the dairy industry and "Ambassa-

NEW!

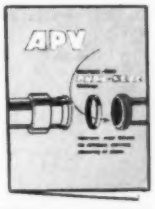
APV PARA-SEAL FITTINGS
all stainless—crevice free

designed specifically for cleaning lines in-place . . . proven to be ideally suited and remarkably efficient for take-down lines

Developed by APV the most experienced and acknowledged leader in the design and installation of CIP systems

NEW APV PARA-SEAL FITTINGS GIVE YOU

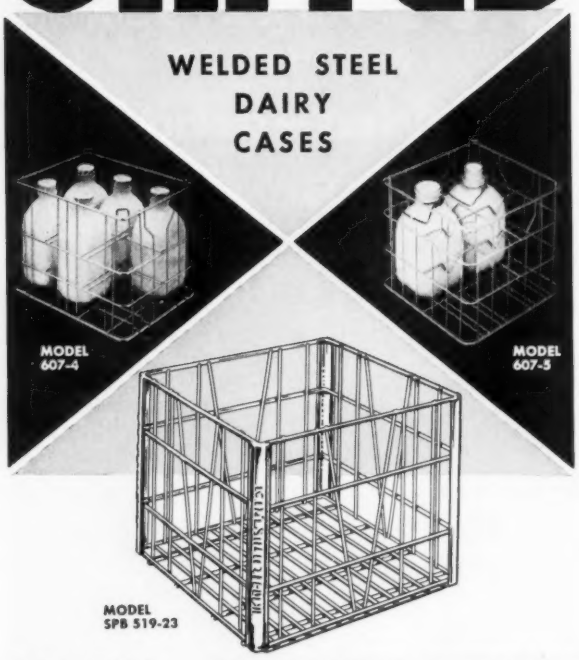
- **Rugged, rigid construction, metal-to-metal closures for extra rigidity**
- **Vibration proof operation**
- **Exceptionally long gasket life**
- **Self-locating gasket for ease of assembly**
- **Designed for high-pressure operation**



Our new 12 page brochure gives complete information on APV PARA-SEAL all stainless — crevice free fittings. Write for your free copy or contact your nearest APV jobber.

APV COMPANY INCORPORATED
137 Arthur Street
Buffalo 7, N.Y.

UNITED



FOR SAFE — SURE BOTTLE HANDLING

Glass or Paper

UNITED, Originator of the welded steel dairy case, offers the most complete quality line in the industry. Millions of these durable long-lasting cases are in use today and are proving themselves virtually "wearout-proof".

UNITED Cases give maximum protection to either glass or paper bottles, and a good variety of models are available to meet your exact needs. For cleanliness, convenience, compactness, and long, low-cost service, UNITED Cases cannot be surpassed. In any refrigerated truck program, United Cases are a must for glass or paper.

UNITED Cases are manufactured of strong steel wire, electrically welded at every wire intersection for greatest possible strength. Cases are heavily plated with "Duraseal", an exclusive United process that is satin smooth, rust resistant and long wearing.

UNITED Model SPB 519-23, shown above, is equipped with full-length corner posts to give paper containers maximum protection, and as a plus feature, your name can be embossed on these posts for permanent identification. This case operates smoothly through automatic stacking and filling machines. Will not "ride up" on conveyor lines. Model 607-4 carries six half-gallon oblong glass bottles and Model 607-5 handles four one-gallon square glass bottles.

For full information on the United line, write for a complete catalog. A United man is near you and will be pleased to tell you more about United products.

UNITED STEEL AND WIRE CO.

137 Fonda St., Battle Creek, Michigan
Branch Plant: Wilkes-Barre, Pennsylvania

dors With Wings," dealing with the International Air Cadet Exchange.

"Crisis" and "The New Story of Milk," have been shown on more than 300 television stations. "Ambassadors With Wings" will not be released until early 1958.

●

OCTOBER ANOTHER RECORD MILK PRODUCTION MONTH

Nine billion four hundred twelve million pounds of milk were produced on the nation's farms in October, one per cent higher than the previous record high for October which was last year. Production was nine per cent higher than the average for the month from 1946 to 1955, inclusive. October production declined two per cent from that of September but was less than the usual September to October decrease of five per cent.

Total milk production in the first 10 months of 1957 came to 108.8 billion pounds. This also is one per cent more than the previous record high of 107.8 billion pounds produced during January-October 1956.

●

EDUCATION, SCIENCE, SALES TOP NDC WINTER CONFERENCE BILL

"EDUCATION – THE priceless ingredient" will be the over-all theme for the 43rd winter conference-annual meeting of the National Dairy council to be held at the Dayton-Biltmore Hotel, Dayton, Ohio, January 27-29.

Subjects to be covered in speeches, presentations, and panel sessions will include:

The Diet-Heart Disease Problem

What Science Says About Dairy Products

Motivating People to Use Dairy Products

How Dairy Council Contributes to the Sale of Dairy Products

Dairy Industry Responsibility in Dairy Council Management.

Prominent participants in the event will include: Dr. Phillip L. White, Secretary of the Council on Foods & Nutrition of the American Medical Association; Dr. William F. Alexander, Pastor, The First Christian Church, Oklahoma City; Shelby A. Robert, Market Research Director, American Dairy Association; and NDC Board members—Will A. Foster, The Borden Cheese Co., W. E. Winn, Pure Milk Association, Chicago; Paul P. Miller, National Dairy Products Corp., New York City; Mose Kiser, Guilford Dairy Co-op Association, Greensboro, N. C.; Leslie C. Mapp, Miami Valley Milk Producers Association, Dayton, Ohio; George S. Bulkley, Carnation Company, Los Angeles (Chairman of the NDC Board of Directors); and Milton Hult, NDC President. Many NDC staff members also will take part in the program. Other speakers and participants are to be announced later.

The first day of the event, Monday, January 27, will feature the annual NDC winter conference. This session deals with Dairy Council problems and opportunities

specifically as they apply to the local market programs of affiliated Dairy Council units operating from 90 offices from coast to coast. Matters of management, budget adequacy, personnel recruitment and Dairy Council programming are carefully explored by dairy industry men who are closely associated with affiliated Dairy Council units.

The annual meeting, which takes place on Tuesday and Wednesday (Jan. 28-29), takes the broad look at dairy industry problems, views Dairy Council program activities for their national impact on consumer eating habits and appreciation of dairy foods. The NDC annual business meeting (which includes election of NDC officers and members of the board of directors) is part of the annual meeting and will occur Tuesday morning at 9 a. m.

The Dairy Council of Dayton, working with NDC, will serve as co-host for the 3-day national event.

Executive director of the Dairy Council of Dayton is Mrs. Hannah Blalock. Officers and members of the Dayton unit board of directors are: President—Leslie C. Mapp; Vice-President—C. Winston Himes, Himes Bros. Dairy, Dayton; Secretary-Treasurer—A. A. Froning, Borden's Finch Farm, Dayton; Don Kelso, Blossom-Hill Dairy, Dayton; Paul Stebbins, producer, Farmersville, Ohio; and John W. Collins, producer, Xenia, Ohio.

●

SUPPLIERS GROW WITH DAIRY INDUSTRY

Many dairy industry supply manufacturers are expanding their productive and sales facilities to meet the expanded needs of the growing and changing dairy industry.

For example:

Thatcher Glass Manufacturing Company, Inc., has leased an entire floor for executive offices at 375 Park Avenue, New York, a brand-new skyscraper under construction. Thatcher plans to move its executive personnel to New York City from Elmira, New York.

The manufacturing plant at Elmira is not affected by the move. Other Thatcher plants are at Streator, Illinois; Lawrenceburg, Indiana; Saugus, California; and Jennette, Pennsylvania.

International Paper Company opened a new plant in Raleigh, North Carolina, for the manufacture of Pure-Pak milk container blanks. The event was marked by the presence of Governor Luther H. Hodges. The new plant employs more than 100 people and can produce 50 million containers a month.

Klenzade Products, Inc., is building a new plant at Beloit, Wisconsin, scheduled for occupancy this month. The clear-span structure, 100 feet by 260 feet houses powdered detergent manufacturing facilities. Late in 1958 an addition, 200 feet by 260 feet, will be made to the original building to house the remaining operations.

Chester-Jensen Company, Inc., has completed an addition to its plant at Cattaraugus, N. Y. designed specifically for the construction of storage tanks. The new building is devoted entirely to the fabrication of storage tanks or, in some cases, over-size equipment such as exceptionally large cheese vats.

BANISH INSECTS FOR YEARS WITH DIANOL IN PAINT!

Insecticide powder mixed with paint controls insects safely, easily, economically!

PROVEN EFFECTIVE BY 8 YEARS USE IN

• Fluid milk plants • Milk products plants
• Hospitals, restaurants, hotels
• Dairies

Names on request

Keep milk-processing areas clear of germ-spreading insects by mixing DIANOL powder with paint, and applying on walls, floors, machines, service entrances, storage rooms, etc!

DIANOL mixes with *any* paint base — oil, water, rubber, vinyl, or dry-powder. Will not alter paints' color or characteristics. When dry, surface is deadly to bugs! Kills all kinds — flies, ants, gnats . . . even tough roaches!

DIANOL is absolutely safe. Power lasts the life of the paint. Cost far less than exterminating service, or continually applying sprays or powders.

Send coupon for (1) folders, (2) testimonials from industrial, institutional, and civic users, (3) U. S. Testing Company and other laboratory reports.

DIANOL DIVISION, Mills-Pearson Corp.
2621 - 24th Street, North, St. Petersburg, Fla. E

Please rush **DIANOL** information to

Name ..... Title .....

Organization .....

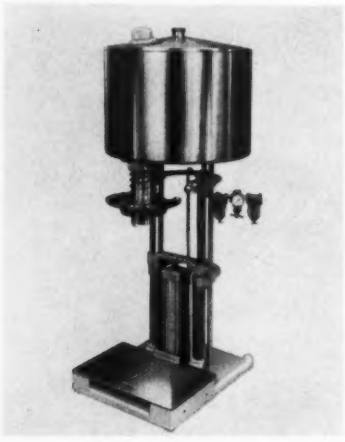
Address .....

City and State .....

Product News

New Can Filler

THE "MILWAUKEE" Can Filler for milk and dispenser cans has been announced by Cherry-Burrell Corporation. Described as fast, easy to operate and clean, the filler's capacity is 240 five-gallon or 120 ten-gallon cans of milk per hour. Capacity is somewhat less for heavier bodied products



such as ice cream mix, cream and condensed milk.

Among the features of the filler, according to the manufacturer, are: low (4") height of loading platform providing less work for operator and less can damage, pneumatic can lift, drip-free sealing of valves and minimum foaming. Compressed air supply required is 50 to 100 p.s.i

For information: Cherry-Burrell Corporation, Dept. 27, 427 West Randolph Street, Chicago 6, Illinois.

●

Discs Filter Faster

GREATER FILTRATION speed and high wet-strength are characteristics of the new "300" Filter discs now

being produced by Kleentest Products Co. Fibres for the discs, which were developed after years of experimentation, are of uniform length and thickness, and are combined with a binder that makes the product easy to handle. The box is compact and requires little shelf space. The discs are packed 300 in a carton, 12 cartons per case.

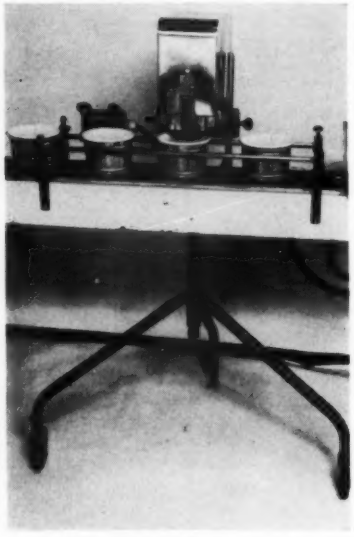
For information: Kleentest Products Co., 234 North Broadway, Milwaukee 2, Wisconsin.

●

Marker Now on Wheels

A MOBILE portable stand has been developed by the Lily-Tulip Cup Corporation for their DairyMarker. The new stand will minimize installation problems and permit the machine to serve double duty, since it can now be transferred from one operation to another within a matter of minutes.

The stand can be ordered as a separate unit or as a package with a new DairyMarker. The unit is adaptable to any automatic or semi-automatic operation, permits printing on any type surface in multiple digits of letters, numbers, symbols or a combination of each. No tools are required to change



the type and ink reservoir, and a special ink is used which dries instantly and will not smear.

For information: Lily-Tulip Cup Corporation, 122 E. 42nd Street, New York 17, New York.

●

Manual for Dairy Testing

A POCKET-SIZE manual for sampling and testing milk and milk products is now available to all dairy operators and testers from Kimble Glass Company, subsidiary of Owens-Illinois Glass Company. Entitled "A Manual for Dairy Testing," it is written by Morris C. Matt, D. Sc.

The manual contains detailed procedures for the determination of fat in milk, cream and other dairy products by the Babcock test. It also includes a section describing various microbiological tests for dairy products, chemical tests for acidity and salt, and tests for the strength of various cleaning agents used in dairy processing. Numerous tables and illustrations are included in the 80 pages of test.

Now in its fifth edition, the revised manual is a handy, pocket reference source.

For information: Kimble Glass Company, Toledo 1, Ohio.

●

Load Capacity Upped with New Truck Body

A NEW DELIVERY truck body, product of the combined technical know-how of Lunn Laminates, Boyertown Auto Body and Dow Chemical, has recently been introduced. The Lunn company designed and molded components for the forward-control cab of fiber glass laminates with polyester resins. Dow's magnesium alloy is used for the truck body. Boyertown's development and engineering facilities produced and assembled the delivery body.

The 10 foot, lightweight "Weight Saver" Merchandiser, as the new truck is called, has a 365 cubic ft. capacity. Also available is a 12 foot body of the same design and materials with a greatly increased cubic payload capacity. Full opening rear doors permit 100 per cent use of capacity. A curved glass corner windshield provides maximum visibility.

For information: Boyertown Auto Body Works, Inc., Boyertown, Pennsylvania.

●

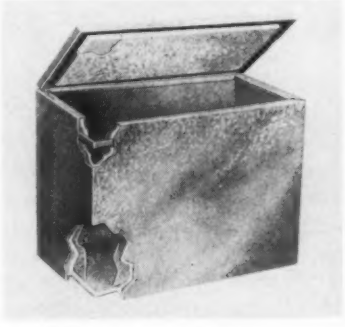
Milk Chest Features Asphalt Insulation

AN IMPROVED Rossford Milk Chest featuring insulation impregnated with asphalt for effective temperature control and protection against the effects of moisture has been announced by P. A. Radocy & Sons, Inc.

The chest is constructed of heavy gauge galvanized steel with ½-inch insulation, ½-inch inside pan and hinges of continuous "piano" type.

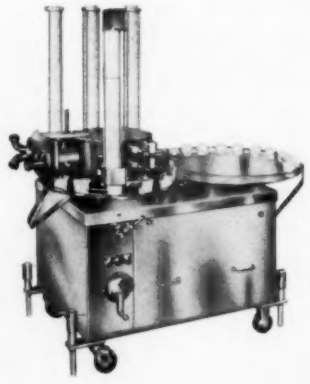
All four sizes hold either quart or half-gallon glass bottles, or half-gallon Purepak containers.

For information: P. A. Radocy & Sons, Inc., Rossford, Ohio.



Fast Acting Cup Filler and Capper

A NEW, fast cup filler and capper is coming off the assembly line at the Anderson Bros. Manufacturing Company plant in Rockford, Illinois. Mod-



els of the new filler were shown at Atlantic City last year.

The machine was designed to handle all standard round nesting-type cups from 3 ounces to 16 ounces. Speeds can be varied while the machine is in full operation.

The machine is mounted on rubber wheels so that it can be moved to those places in the plant where it is most needed. Dimensions are 36 inches wide and 62 inches long.

A new screw-type stripping action dispenses three cups onto the rotary-filling table simultaneously. The full range of 3 oz. to 16 oz. standard cups are handed with one dispenser drive unit and three sets of retaining racks are required. Non-standard cups can also be handled with special attachments.

With four filling orifices, the Model 331 Filling Nozzle rotates with the cups as they circle continuously through the capping station and onto the accumulator table. One nozzle is required for most operations; however, an extra filling head is optional for special applications.

A new triple-action capping station dispenses the lid onto the cup, positions the lid lightly permitting trapped air to escape, then firmly seals the lid without compressing or damaging the product.

For information: Anderson Bros. Mfg. Co., 1907 Kishwaukee Street, Rockford, Illinois.

●

Emulsion for Wall Paints

AN ALKYD RESIN water emulsion, an improved ingredient for interior wall paints, has been developed by American Cyanamid Company and is now available commercially. Paints made with the emulsion are easy to apply, odor-free and solvent in water in their fresh state. Dried spots are removed with mineral spirits or turpentine, paint thinner or nail polish remover.

Trademarked Cyaqua, paints made with this emulsion can be applied over an old flat or glossy oil finish. Recoating, if necessary, can be done within an hour. Paints come in a full range of colors and provide a uniform flat finish.

For information: American Cyanamid Company, 30 Rockefeller Plaza, New York 20, N. Y.

●

"Vehicular Desk"

AN ALUMINUM "Vehicular Desk," suitable for use in delivery trucks and other vehicles, is now being manufactured by Product Development Corporation. The desk has an 8" x 12" writing platform with 1" deep basket welded underneath, enclosed on three sides. The fourth has a retaining spring to prevent completed work from slipping out. When the ball point is removed from holder, the spring is released and papers are easily accessible. A spring clip retains undelivered papers in delivery sequence. The mounting bracket may be adjusted sideways, backward and forward. The desk portion is easily detachable from

indexing bracket so operator may carry to point of delivery. A desk light is optional.

For information: Product Development Corporation, P. O. Box 789, Norwalk, Connecticut.

●

Light Weight Truck Tank

THE CHALLENGER, a bulk pick-up truck tank, was recently introduced by Walker Stainless Equipment Company. According to the manufacturer, the new tank truck is light in weight, owing to its compact design and the use of lighter materials.

The unit is equipped with a two-compartment, side-mounted cabinet to the rear of the cab on the driver side, housing milk handling lines, 1½" trans-

flo plastic hose, sanitary fittings, positive pump and sanitizer container with stainless steel sample dipper. The mechanical compartment houses motor, reversing switch, coil spring power cord and plastic sample chest.

The tank is insulated with styrofoam and cork. Outer jackets of stainless steel are available. The inner liner is of 14 gauge stainless steel.

For information: Walker Stainless Equipment Company, New Lisbon, Wisconsin.

●

Plastic Handles for Gallon Jugs

A PLASTIC handle for gallon jugs has been developed by Sun Sales Company. The handles, made of polyethylene, are molded in one piece and come in color or plain.

When not in use the bail on the handle assumes a horizontal position. When in use the bail is vertical and exerts a wedging action on the ring part of the handle which grips the neck of the bottle. According to reports the material is able to withstand the wearing action that occurs when the handle is moved from the horizontal to the vertical position. A full bottle was raised from and lowered to a table 34,000 times before any sign of fracturing appeared. This is about 33,846 times more than the average gallon jug is raised and lowered.

The handle has also been subject to corrosion tests in a 3½ per cent caustic solution and at extreme temperatures. The report says there was no deterioration or discoloration of the material.

For information: Sun Sales Company, Lakewood, Ohio.

●

Milk Tanks Allow Instant Cooling

STAINLESS STEEL milk tanks with either bottom or sidewall cooling are offered by Globe Fabricators, Inc. A tab for the weights and meas-

ures seal is included on the adjustable legs. The tanks have cylindrical, side-aerated walls with a frost-lip for instant cooling. Stainless steel is used both

inside and out for the all-welded, polished construction.

Mounted on the end of the tank with a spud attached to the inner wall is an accurate thermometer, and on the sidewall cooling models a distributing trough moves the milk over the cooling coil areas.

The tanks have close fitting, double opening lids which, on the bottom cooling models, have a strainer opening in each lid. Agitator motors are single or three phase, ¼ horsepower 29 r.p.m. Sizes ranging from 150 gallons up to 2,000 gallons capacity are available.

For information: Globe Fabricators, Inc., Paramount, California.

●

Space-Saving Storage Unit

A REFRIGERATED milk and dairy products storage cabinet, designed to fit on kitchen countertops under wall cabinets is being manufactured by

Norris Dispensers, Inc. The unit releases space in over-crowded refrigerators.

Called the Norris Cold-Bar the cabinet comes in two sizes, the smaller holding six one-half gallon bottles, and the larger holding nine one-half gallon bottles.

For information: Norris Dispensers, Inc., 2720 Lyndale Avenue, South, Minneapolis 8, Minnesota.

●

Separators Described

THE COMPLETE line of Westfalia dairy separators and clarifiers is described in the 16-page catalog issued by Centrico, Inc. The catalog features illustrations of each machine in the line, as well as tables of rated capacities and schematic drawings of typical dairy set-ups. Included is a complete technical description of the liquid-seal principle upon which three types of the company's separators and one type of clarifier is based. The "Tri-Purpose" separator is also described in full.

For information: Centrico, Inc., Englewood, New Jersey.

●

Gas-Fired Packaged Boilers

THE NEW gas-fired York-Power "Steam-Pak" automatic boiler line fea-

tures a burner head designed for the efficient firing of natural or mixed gas, which insures positive firing and proper mixing of air and gas.

The improved design reduces the required air pressure. Therefore the blower motor is smaller and electricity costs less per boiler h.p. developed.

Boiler burner, accessories and controls are included in the packages. Controls have been simplified and are centralized.

The new line is available in 12 sizes ranging from 30 to 125 h.p. It will be extended to 600 h.p. in the future. Each size may be ordered to supply high-pressure steam, low-pressure steam or hot water.

For information: York-Shipley, Inc., 500 Jessop Street, York, Pennsylvania.

●

Milkstone Remover

A MILKSTONE remover, Cleanite 29, with fast wetting action which saves time and assures thorough cleaning, has been announced by Cleanite Products, Inc. The new product has no odors or residue and flushes quickly without excessive use of rinse water. It contains a new additive for speeding the removal of milkstone deposits.

Cleanite 29 is used at a concentration of ½ oz. to the gallon in warm water when brushing or hand cleaning dairy equipment. When circulating through lines, concentrations from ¼ to 2 oz. per gallon are used.

Variations in solution, temperature and length of circulation will occur from plant to plant and Cleanite's technical department will assist in developing the most efficient and economical system.

For information: Cleanite Products, Inc., 2649 Bristol Pike, Cornwells Heights, Pennsylvania.

●

King-Size Cottage Cheese Container

THE DEMAND for "family" size cottage cheese portions is now being met by the Lily-Tulip Cup Corporation with their new 32-ounce container. Available in both stock and special print designs, the container takes any standard 16-ounce Nestrite lid, there-

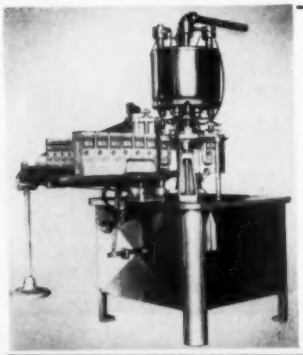
by reducing lid storage problems and simplifying inventory control.

For information: Lily-Tulip Cup Corporation, 122 East 42nd Street, New York 17, New York.

●

Quality Control Bulletin

A BROCHURE on quality control, featuring their Milk Tester, has just been published by Mojonnier Bros. Company. The units described test accuracy and quality of dairy products, including fresh milk, condensed milk, ice cream and cheeses. The bulletin (353-16) includes a "Cash Value of



Cramer Carton Fillers
"Out-Perform" THEM ALL
30 Carco Quarts PER MINUTE
Model CAU . . . .
WITH FULLY AUTOMATIC INFEED CONVEYOR
$5950.00
PERFORMANCE GUARANTEED

ward e. cramer associates inc.
531 boylston street • boston 16, massachusetts • commonwealth 6-1921

WANT A JOB?
LOOKING FOR A GOOD MAN?

AMEPICAN MILK REVIEW Classified Advertising will give you quick results because AMR's complete coverage of the fluid milk and milk products industries reaches the men you want to talk to . . . the owners, managers and buying executives. AMR is the only national dairy publication offering complete, personalized coverage.

Deadline for classified advertising is the 12th of the month preceding publication. Full rate information will be found at the beginning of the CLASSIFIED OPPORTUNITIES SECTION in the back of the book.

AMERICAN MILK REVIEW 92 WARREN STREET NEW YORK 7, N. Y.

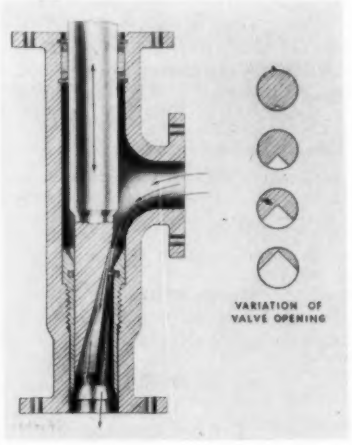
Accuracy Chart," showing savings which result from the use of the tester.

For information: Mojonnier Bros. Co., 4601 West Ohio Street, Chicago 44, Illinois.

●

Valve Controls Liquid Flow

THE TAPERED Orifice Valve developed by General-American Valve Co. offers a new concept of flow con-



trol. By moving a plug with a tapered slot into and out of a circular opening, the flow of fluid or gas is controlled by the area of the tapered slot at the head of the opening. A circular sealing ring eliminates by-pass.

The principal advantages claimed by the manufacturer are: high accuracy, variable control, non-clogging, non-freezing, abrasion-resistant, excellent co-efficient of flow at all settings with very low turbulence.

The valve is available in many sizes, pressure ranges and connections. Special design problems are welcomed.

For information: General-American Valve Company, P. O. Box 444, Corona Del Mar, California.

●

Valve for Water Heaters

A SERIES of temperature-pressure relief valves for water heaters, featuring an off-set fuse plug holder, has been announced by Cash-Acme. The holder

permits fuse plug replacement without disturbing the valve's installation. The fuse plug stem (either short or a 6" extension) is removed simply by unscrewing the hex nut on top of the valve directly above the inlet. By utilizing this design, the fuse plug is correctly placed in the hottest part of the tank's water.

For information: Cash-Acme, P. O. Box 191, Decatur, Illinois.

●

Refrigeration Oil Has High Stability

AN ALL-TEMPERATURE refrigeration oil, Suniso 3G, has been announced by the Sun Oil Company. It is designed to work well with all modern refrigerants, including Freon-22, Isotron-22, and Genetron-141.

The lower floc point, increased stability and copper-plating resistance of the new oil permits efficient operation of refrigeration units.

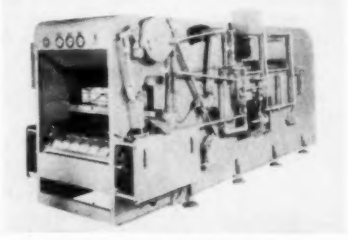
For information: Sun Oil Company, 1608 Walnut Street, Philadelphia 3, Pennsylvania.

●

Milk Bottle Washers

A NEW line of small and medium capacity washers that will handle a wide range of bottle sizes is being introduced by the Cherry-Burrell Corporation. The Model "M" washers are available in 6 and 8-wide models with capacities of 20 to 64 bottles per minute. Half-gallon bottle pockets handle standard milk bottles from half pint to rectangular half-gallons with 38 to 56 mm. finish. Models are also available with quart pockets.

Washers employ the hydro-scrubbing washing principle have convenient



loading table, variable speed drive and provide pre-rinse and tempering treatment.

Other features include: a space-saving pumping system; non-clogging Tri-Flow spray nozzles; automatic discharge of bottles; and the use of corrosion resistant metals for all infeed and discharge parts. Can be equipped with a chlorinator.

For information: Cherry-Burrell Corporation, 427 Randolph Street, Chicago 6, Illinois.

●

Filling Machine for Smaller Operators

A SINGLE PISTON filling machine especially designed for smaller operators or firms utilizing short to medium production runs has been announced by Hope Machine Company.

The new unit, Type 15 MS 1, features a cross conveyor synchronized

with the filling cycle of the single piston unit. Containers moving along the conveyor are made to stop, pausing directly under the filling nozzle. This is accomplished by means of a special index positioning arm which moves in and out in time with the discharge stroke of the machine. The quantity deposited is regulated by means of a micrometer type adjustment.

A variable speed drive delivers from 12 to 25 cycles per minute. The machine can be equipped with an accessory foot control switch if desired.

For information: Hope Machine Company, 9400 State Road, Philadelphia 14, Pennsylvania.

●

Chemical Floor Hardener

A FOUR-PAGE brochure outlining the features and advantages of Lapidolith, a product used for chemically hardening and dustproofing concrete floors, is available from L. Sonneborn Sons, Inc. The folder is illustrated with photographs of actual installations and provides specifications and application data. Information is included on use of the product on terrazzo and vertical concrete surfaces of storage tanks, supporting columns, etc.

For information: Building Products Division, L. Sonneborn Sons, Inc., 404 Fourth Avenue, New York, New York.

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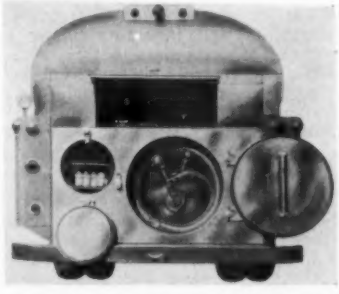
Bulk Milk Tanker

A BULK TANKER featuring round design pump and sample compartments was recently introduced by Mojonnier



Bros. Co. According to the company the new design provides improved sanitation, since it does away with corners

and edges where dirt and other foreign matter could get a foothold. Greater operating economy is claimed as less clean up time is required.

The entire body, as well as the pump and sample compartments, is stainless steel. The tankers are available in from 1,000 to 4,000 gallon capacities, and come in both single and multiple compartment types for truck mounting and trailorized design.

For information: Mojonnier Bros. Company, 4601 West Ohio Street, Chicago 44, Illinois.

●

Poly Bag Displays Cottage Cheese

DRY CURD cottage cheese is being packaged in a clear polyethylene bag by the Lucerne Milk Company, Division of Safeway Stores, Inc. The bag

is produced by the Shellmar-Betner Division of Continental Can Company. According to the manufacturer, the bag capitalizes on the cheese's fluffy visual appeal and provides it with full freshness protection.

Red and blue has been used in the package's printed design which shows an arrowhead pointing into a barrel overflowing with cheese.

The .0015" poly tubing stock is slip-treated to aid in filling. After filling, each package is check weighed to its 32-ounce capacity.

For information: Continental Can Company, 100 East 42nd Street, New York 17, New York.

●

Process Control Booklet

"PROCESS CONTROL by Analytical Instrumentation," an eight-page illustrated article reporting the recent significant developmets in this field, is available from Schlumberger Well Surveying Corporation. Written by A. R. Aikman of this company, the paper examines Nuclear Magnetic Resonance and other new analytical processes as improvements in control and detection techniques.

Spectroscopic and non-spectroscopic methods, instruments and techniques are discussed, including infra-red, mass spectrometry, vapor chromatograph, thermal catalytic converters and flow colorimeters. The author points out that simplified equipment for control-laboratory use is available for the non-destructive determination of moisture content of solids.

For information: Schlumberger Well Surveying Corporation, Ridgefield, Connecticut.

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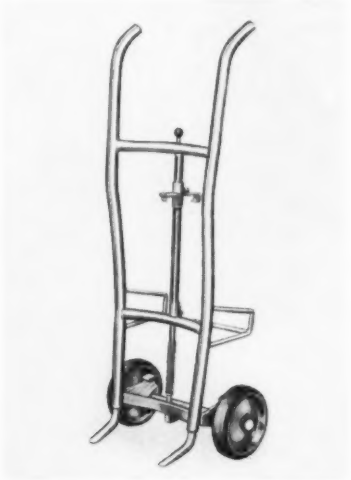
Improved Barrel Truck

FINGER-TIP CONTROL which quickly locks truck in a safe "standing-up" position is a feature of the im-



proved model "Float-away" barrel truck introduced by the Dico Company. With the new design, less load is put on the handles when empty, resulting in less operator fatigue and greater maneuverability.

The roller bearing wheels have been improved by adding a dust seal on the inside and a smooth dust cap on the outside. The loaded barrel can be placed in a horizontal position for draining. The wheels and axle of the truck never leave the floor in any stage of the operation.

For information: Dico Company, Des Moines, Iowa.

●

Chemical "Products Book"

A COMPREHENSIVE book containing detailed information on their entire line of alkalies and chemicals has been announced by the Solvay Process Division, Allied Chemical & Dye Corporation. The "Products Book" includes data on the uses, markets, physical and chemical properties, packaging, handling and storage of the company's products. Also included is a listing which groups the products by consuming industries or manufacturing processes.

For information: Dept. PB, The Solvay Process Division, Allied Chemical & Dye Corporation, 61 Broadway, New York 6, New York.

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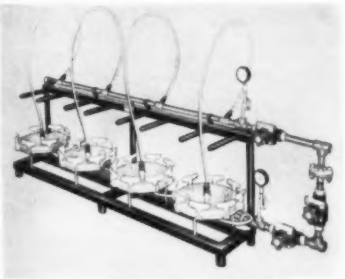
Filters Described in Technical Booklet

THE CHARACTERISTICS and applications of MF Millipore Filter membranes for the analysis of liquid and gas dispersed particles and micro-organisms are fully described in a 16-page booklet available from the Milli-



pore Filter Corporation. Introduced is the newly developed high strength Microweb Filter. Filters are available in nine porosities ranging from 10 millimicrons to 5.0 microns.

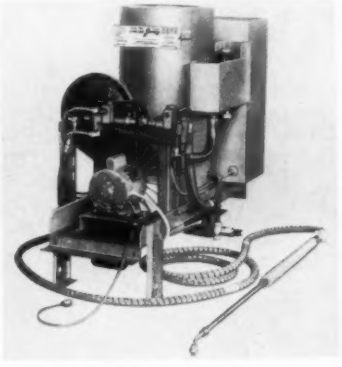
Laboratory and field applications and analytical techniques are outlined, as well as decription of apparatus available. Shown here is a production assembly utilizing the Microweb filter, for use where extremely critical filtration requirements exist.

For information: Millipore Filter Corporation, Watertown 72, Massachusetts.

●

High-Pressure Steam Cleaner

THE "SEVEN-FIFTY" Series Hypressure Jenny steam cleaner is announced by Homestead Valve Manufacturing Company. Its design enables it to be utilized in the cleaning and sanitizing of dairy buildings, equipment and trucks. The unit features: automatic electric ignition, positive displacement pump with stainless steel disc check valves; automatic protection for vapor hose against destructive action of superheated steam; contamination-proof water system; and built-in thermal overload protection for the motor. Capacity is said to be 75 gallons per hour at any pressure. Stand-



ard unit includes cleaning gun with round nozzle and asbesto-steel vapor hose.

All working parts are exposed for periodic inspection and quick, easy repair or replacement when necessary. Weighs approximately 310 pounds.

For information: Homestead Valve Manufacturing Company, Coraopolis, Pennsylvania.

Refrigerating Route Trucks

Size, Shape, Dryness Important Factors in Good Load Icing

THE OLDEST method of refrigerating route trucks has developed some new techniques as it keeps pace with a changing industry. Shaved ice, flake ice, crushed ice—all have served milk distributors well in the job of keeping milk temperatures down during the delivery period. Newest development in this method of refrigerating is chipped ice.

The most impressive item we gleaned from our talks with men who have made a study of the use of ice was the fact that there is a right way and a wrong way to ice a load and that there are some pretty exact specifications for the size of ice used in the process. The ideal is to get a blanket of ice over the load that gradually filters down combining cooling with a washing action. If the ice is too fine or too wet it tends to pack and bridge and does not get among the cases. If too much ice is used, the cost is greater than it needs to be. A rule of thumb for hot summer days says that best results are obtained when 10 to 15 pounds of chipped ice per case are used.

The ice is applied to load in the form of a blanket over the top layer of cases. Motion of the truck tends to sift the chips through spaces between containers in the cases. Icing efficiency is measured in terms of melting caused by product. Heat is taken out of the milk and the containers and absorbed by the ice which, if we remember our high school physics, is why the ice melts.

Chip Best Dry Frozen

Chip ice has a curved surface caused by the cylindrical character of the chamber in which it is made. The ice should come out of the ice-making apparatus dry frozen. The emphasis is on the term "dry." If the chip is wet, it has a tendency to stick which interferes with the sifting action referred to earlier.

Studies of icing techniques have shown that variations in containers require variations in the thickness of the chips for maximum refrigeration efficiency. A chip approximately an eighth of an inch thick is best for paper containers while a thinner chip, about a sixteenth of an inch in thickness, is most satisfactory for glass bottles. The thickness can be controlled by regulatory devices on the ice-making machine. Length of the chips runs between one and two-and-a-half inches.

Ice-making efficiency has been improved to the point where chip ice can be produced for five cents a hundred. At this rate the cost of icing a forty case load with fifteen pounds of ice to a case would be thirty cents.

Cold Conservation

The problem of conserving the refrigerating effect is one that has been met in a variety of different ways by milk distributors. Sliding doors, dutch doors, waist-high barriers, tarpaulins, have all been used in an effort to prevent an influx of warm air into the refrigerated area of the truck. One of the simplest devices we have seen was developed by James Owen, fleet superintendent at Abbott's Dairies in Philadelphia. Mr. Owen put a horizontal bar across the width of the truck just in back of the driver. A fairly heavy canvas curtain is suspended from the bar and fastened to the sides with snaps. Cold air, being heavier than warm air, seeks the lowest level in the truck. The big loss in refrigeration occurs when the cold air drains off from the bottom of the load. The curtain, not high enough to interfere with the driver's ability to reach into the load but high enough to prevent the cold air from draining off, has worked very well. Mr. Owen says that it has increased the efficiency of their icing substantially.

Corrosion a Problem

Another problem associated with refrigeration and ice in particular is the corrosive action of the moisture. One method of meeting this situation is to install a liner made of galvanized iron on the floor of the truck. The liner is usually a custom made job done by a local tinsmith. Another method has been suggested by Mr. H. A. Schwartz, president of the Montpelier Manufacturing Company. Mr. Schwartz's firm manufactures truck bodies. After contending with the corrosion problem for many years, Mr. Schwartz reports that his company has found that a clear drying oil called Penetrol used as a paint fortifier is very effective as a protection against rust.

Methods of distributing ice on the load are a mixture of the old and the new. The ice tub and the shovel are still used extensively where the number of trucks to be loaded does not justify automatic equipment. Where the size of the fleet makes it economically feasible, some dairies are using a chute arrangement that leads from an ice storage bin. The storage bin is filled directly from the ice making equipment. The chute is usually gravity fed. The usual and obvious practice here is to have the storage bin above the height of the truck. In some cases the truck drives under the bin to be iced, in other cases the chute takes off from the side of the bin.

Major points to watch in order to get the best results in icing are size, shape, thickness and dryness of particles so that bridging will not take place and ice will filter down through the entire load.

PLEASE BEER WITH US

A routeman for Captree Dairies of Lindenhurst, New York found the ultimate expression of futility in the form of a note for the milkman. The note said, "Milkman:

"Please skip our milk delivery this A.M.—There's no room for the beer. Thanx."

We are indebted to Mrs. Gertrude Kohl, a Captree employee, for calling our attention to this major cause of melancholy among Sales Managers.

Classified Opportunities

EQUIPMENT — SERVICES — PERSONNEL — ETC.

To ensure appearance of your ad in a given issue, copy should be in our hands by the 12th of the previous month (i.e.: copy in by October 12th for November issue).

FOR SALE OR EXCHANGE (BUSINESS MACHINERY AND SUPPLIES), WANTED TO BUY, BUSINESS OPPORTUNITIES, SALES PROMOTION, ETC.

Lightface, per word.....$ .10 **Boldface, per word.....$ .15**
Minimum Charge ..... 2.00 **Minimum Charge 3.00**

HELP OR POSITION WANTED

Lightface, per word.....$ .05 **Boldface, per word.....$ .10**
Minimum Charge ..... 1.00 **Minimum Charge 2.00**

BOX NO., DOMESTIC (additional)....$ .50 **BOX NO., FOREIGN (additional).....$1.00**

(In counting the number of words, please remember to include the address. This applies also to box numbers.)

DEADLINE—12th of the month preceding publication. PUBLISHED first of the month. *No classified advertising will be accepted to run with borders or special spacing. All such advertisements are considered "Display" advertising and will be billed at regular display advertising rates. (Rates and mechanical requirements on request.)*

PLEASE NOTE CHANGE IN CLOSING DATE FOR CLASSIFIED ADVERTISING.

NOTE: Names and addresses of advertisers using blind addresses cannot be furnished direct from this office. Write to Box Number (as indicated), care of American Milk Review.

NOTICE: The publisher disclaims any responsibility for the reliability of parties advertising in our Classified Opportunities Section, or for the truthfulness of statements made in such advertisements. In answering such ads, ask for references if parties are unknown personally, before sending money. Our readers are requested to assist us in keeping unreliable parties from advertising by reporting suspicious dealings.

We reserve the right to refuse to accept advertisements which we believe are detrimental to the dairy industries.

EQUIPMENT FOR SALE

Vacuum FILLER, 120 per min., Mojonnier Model 125 can be converted to handle gal. Contact Mr. Les Bone, FOREST HILL DAIRY, 2040 Madison Avenue, Memphis, Tennessee. 12-M-57

USED MILK TRAILER: 3,200 gallon. Portorsville, new Reyco tandem, new tires, new white paint, grade A tank in excellent condition, $5,750.00. Write to: TRAILER SALES, INC., 508 Kansas Avenue, Kansas City, Kansas. Phone MA 1-6262. 12-M-57

C.B. 50 ton Sweet Water COOLER, Model 5-S-10, $400.00. Milk CASES, wire, wood, half-pints, quarts, $1.25. Fancy Individual MOLDS $1.00. C. B. 150 gallon S. S. inside PASTEURIZER $250.00. De Laval 172 SEPARATOR $500.00. Lippman 4x4 self-contained $350.00. Good used equipment for all types of Milk, Ice Cream, Cheese plants. Write us what you need. GORDON EQUIPMENT COMPANY, 6530 W. Jefferson Avenue, Detroit 17, Michigan. 12-M-57

FOR SALE: 300 gallon CP HOMOGENIZER, $500.00. 10 or 12 HP vertical flueless Lookout BOILER, used less than 2 years, $300.00. Sweet Water Cooling UNIT making 1,200 to 1,500 lbs. of ice with water circulating pump and 2 HP COMPRESSOR, $550.00. 5S and 3S International Harvester SEPARATORS, $100.00 each. One 3 section 6 ft. surface COOLER, $75.00. Duplex 2 head hooding MACHINE for 51mm hoods, $200.00. C-B bottle FILLERS, 7 valve with 51mm plug cappers, $250.00. GV16 with 48mm plug cappers, $450.00. Lathrop-Paulson S.S. Suspension type dump TANK, 500 lbs. capacity, with strainer and 12 in. air operated valve, $300.00. 6 Wide CP Soaker bottle WASHER with power bottle conveyor and assembly table, $500.00. All equipment in either excellent or good condition; priced f.o.b. JOHNSTOWN SANITARY DAIRY COMPANY, Johnstown, Pennsylvania. 12-M-57

FOR SALE: Paper bottling MACHINE; 1954 Model LT Ilreco Pure-Pak, fills 20 qts., pts., ½-pts., per minute, excellent condition; price $4,500 f.o.b. JOHNSTOWN SANITARY DAIRY COMPANY, Johnstown, Pennsylvania. 12-M-57

FOR SALE—Triangle—Bagby R-4S Seal King Paper Bottle FILLER. Excellent condition. 1½ years old. Price $4,000.00. Contact D. G. Hart, CHERRY-BURRELL CORPORATION, 1615 E. 25th Street, Cleveland 14, Ohio. 12-M-57

MILK BOTTLES—No. 2 mold, 56mm finish. 125 gross tall square quarts, 50 round pints and half pints. Embossed "Dougan" on neck. Packed in trays. Also pint and half pint cases. Make offer. Write to: DOUGAN DAIRY, Beloit, Wisconsin. 12-M-57

FOR SALE: One Model LT20 Ilreco FILLER. Two years old. Excellent condition. Bargain price. Write to: BOSTON-DURHAM ICE CREAM COMPANY, INC., South Boston, Virginia. 12-M-57

FOR SALE: Special prices on used cases. WOODEN CASES: 20 squat square ½ pints—$.60 ea. 20 square pints—$1.25 ea. WIRE CASES: 12 cream top square qts.—$1.00 ea. Wooden Cases can be overbranded with your name at additional cost. All cases offered subject to prior sale. Write to: STUART W. JOHNSON & COMPANY, 611 Main Street, Lake Geneva, Wisconsin. 12-M-57

Pfaudler Flash PASTEURIZER, complete with 75 stainless steel plates. Like new. Write to: HAMMER FOOD PRODUCTS CORPORATION, 2 Fountain Avenue, Brooklyn 8, New York. 12-M-57

EQUIPMENT FOR SALE

FOR SALE: REDUCED PRICES ON ALL USED WOOD, WIRE & ALUMINUM MILK BOTTLE CASES. Write to: STUART W. JOHNSON & COMPANY, 611 Main Street, Lake Geneva, Wisconsin. 12-M-57

USED EQUIPMENT—1—40 Qt. Batch FREEZER—Cherry-Burrell, Model Fr 40—Serial No. 2918—$100.00. 1—C.P. Autospeed Babcock TESTER. Holds 24 Bottles. Serial No. 1230—$15.00. 1—Baker Ammonia ICE MACHINE 2½ x 2½ Complete with controls—$250.00. 1—6 Ft. Schlueter Pipe RACK—$50.00. 5—Taylor Recording THERMOMETERS For Pasteurizer Vat—$25.00 each. 1—H.P. Freon COMPRESSOR 110/220 Delco, Model A 4385—$35.00. 1—1,000 gal. per hour C.G.C. Manton-Gaulin HOMOGENIZER Serial No. 420452278—$1,750.00. 11—Kari Kold Ice Cream CABINETS for trucks—$100.00 each. BUTTER EQUIPMENT: 25—30 lb. Boxes, Cherry-Burrell No. 12548. 1—No. FP30 Friday Butter Printer, Serial No. 7648 with extra cutting frame for ½ lb. square and ½ lb. Eastern cuts. 1—Vane CHURN, Model A120 with 1½ H.P., 3 phase motor, Capacity 120 gal. Cream. Will work 370 lbs. Butter. Good Condition. Butter Equipment as a unit—$200.00. Write to: TURNER DAIRIES, Anniston, Alabama. Phone ADams 7-6751. Post Office Box 1161. Contact N. O. Pilgreen or R. R. Knight. 12-M-57

USED EQUIPMENT: 1—Cherry-Burrell Model SFI-100M, Sr. No. 4690, 100 gal. Square PASTEURIZER with Recording Thermometer. F.O.B. Talladega—$250.00. 1—King Zero, Model E-410, Ice Builder, Sweet Water Tank, Complete with Automatic Controls for Ammonia, 3 H.P. Worthington High Head Circulating Pump. Used 3 years. In First Class Condition. F.O.B. Talladega—$1,500.00. 1—18 Mould-Vaden, Six Cycle Novelty Tank Sr. No. 95, with Ammonia Accumulator and Float Control F.O.B. Talladega—$200.00. 1—Cherry-Burrell, 6,000 lb. Raw Milk Plate Cooler, in Type "C" Press, with new Exchange Regasketed Plates. F.O.B. Talladega—$900.00. 1—Creamery Package, 40 Qt. Batch Freezer, with Stainless Clad Accumulator. First Class Condition. F.O.B. Gadsen—$250.00. 1—40 Qt. Emory Thompson Batch Freezer. Fair Condition. F.O.B. Talladega—$150.00. 1—8 Ft. Four Section Multipass "Tinned Copper" Milk Cooler, with Stainless Distributor Head, Stainless Pan & Stainless Covers. Good Condition. F.O.B. Talladega—$200.00. 1—Cherry-Burrell, Sanitary Pipe & Fitting Rack. First Class Condition. F.O.B. Talladega—$30.00. Write to: TURNER DAIRIES, INC., P. O. Box 1161, Anniston, Alabama. Contact: N. O. Pilgreen, Anniston, Alabama. Phone ADams 7-6751. R. C. Burton, Talladega, Alabama. Phone EMerson 2-2391. 12-M-57

1—12 Horse Powered Gas Fired BOILER—Dutton—$200.00. Have replaced same with larger Boiler. Also have 1—50 gallon PASTEURIZER with Recorder suitable for Buttermilk—$150.00. Write to: GLENWOOD DAIRIES, Hornell, New York. Phone 444. 12-M-57

Model A.P. Serial 1351 Mojonnier Dawson ½-gallon milk carton FILLER with automatic Squeezer Sealer—available on or before December 15, 1957. New Cost $4,031.00, Sale price $2,000.00. Write to: SUNFLOWER CO-OP CREAMERY ASSOCIATION, Everest, Kansas. 12-M-57

"600 new five gallon CANS, plug lids, never used. $6.00 each. Write to: COTTAGE CREAMERY, Orrville, Ohio." 12-M-57

EQUIPMENT FOR SALE

"Doering 400 Patty PRINTER, 2 years old; Gellman No. 718 Wrapper, 3 years old. Have discontinued producing butter pats. Write to: COTTAGE CREAMERY, Orrville, Ohio." 12-M-57

FILLER CB Model K 24 Valves 120 Quarts SS Vacuum; Three SS 292 DeLaval SEPARATORS like new; Two DeLaval 188 CLARIFIERS SS Discs $500.00 each; One Rotary Can WASHER. Write to: F. T. AMMANN and COMPANY, INC., 2211 Olive Street, St. Louis 3, Missouri. 12-M-57

Cherry-Burrell 200 gallon VISCOLIZER, used approximately three years. 55 used wood ½-pt. CASES, tall 30 to case. 24 pt. wood CASES. 1 Model E DeLaval SEPARATOR. 1—4x4 York Ammonia COMPRESSOR with condenser and a number of odd size ammonia valves. Write to: VASSAR DAIRY, Vassar, Michigan. 12-M-57

1—100 gallon stainless steel insulated Cherry-Burrell PASTEURIZER; 1 Model A.P. Mojonnier Dawson automatic paper FILLER, to handle ½-pints, quarts and ½-gallons. Write to: CHESTER CITY DAIRY, Chester, Illinois. 12-M-57

ICE CREAM AND DAIRY EQUIPMENT: 40 qt. CB direct expansion FREEZER, $300.00. Manton-Gaulin HOMOGENIZER, 200 G.P.H., $300. 48x30 in. COOLER with cover and supports, $150; C-P 6-Bottle WASHER, $300; Specialty Brass 6-bottle Filler, $200; DeLaval CLARIFIER, 200 G.P.H., $100; one 100-gal. PASTEURIZER, motor agitators, $100; 150 gal. S.S. Cottage Cheese VAT, $100; Unit Steam HEATER, 13½x15x27 in. with blower, $50; 2 Taylor Recording THERMOMETERS, $40 each; McCormick SEPARATOR, $60. Write to: M. O. CARTER, Box 268, Richland Center, Wisconsin. 12-M-57

Two quart oblong BOTTLES 48 M.M. $10.00 gross. Milk Cases, wood or wire in quarts, pints, half $1.25 each. Vilter self contained 4½ with 15 H.P. motor $500.00. PASTEURIZERS, FILLERS, VATS, etc. Write us what you need. Merry Christmas and Happy New Year. GORDON EQUIPMENT COMPANY, 6530 W. Jefferson, Detroit 17, Michigan. 12-M-57

FOR BUTTER PATTIES—WAXED U-BOARDS, 6"x15¼", 16 point double white, $9.00 per thousand or 5⅛"x 6⅜", $3.00 per thousand. Samples cheerfully sent upon request. Write to: BORAX PAPER PRODUCTS COMPANY, 350 East 182nd Street, Bronx 57, New York. 12-M-57

BOILERS — HIGH PRESSURE. WE CARRY A large selection of ASME National Board high pressure boilers, gas, oil and coal fired, ranging from 10 to 1,000 h.p. Each guaranteed in excellent condition. Sale sheet and complete data sent upon request. Write to: WABASH POWER EQUIPMENT COMPANY, 9750 Skokie Blvd., Chicago, (Skokie), Illinois. 12-M-57

NEW LOW PRICES ON PLUNGER SEALS FOR your C. P. and M. G. HOMOGENIZER. Send for trial offer. Advise style and capacity of homogenizer. Write to: STUART W. JOHNSON & COMPANY, 611 Main Street, Lake Geneva, Wisconsin. 12-M-57

FOR SALE: 5 million folding BOXES, clean, plain, white, paraffin dipped, sanitary, 2 13/32"x 1½", 4 oz. I. C. Perfect for Food, Ice Cream, Cheese, Butter, Drugs, Nuts, Screws, Parts, Toys, Seeds and Specialties. Prices way below factory cost. Order any quantity. Send letter head for free samples. METROPOLITAN, 313 East 31st Street, New York City 16, New York. 12-M-57

EQUIPMENT FOR SALE

"One Rice & Adams Straightaway ten-can-per-minute Can WASHER, Serial No. 4399, equipped with two space milk saver and stainless steel pan. Reeves variable speed drive. Installed 1949. Write to: ROBERTS DAIRY COMPANY, Omaha, Nebraska. Phone C. B. Deffenbaugh at REgent 4444." 12-M-57

"FOR SALE—One American Can FILLER. Capacity 48 quarts per minute, 65 half-pints per minute. This machine is in excellent condition and we have all attachments to bottle quarts, pints, ⅓-quarts and ½-pints. Price will be quoted to interested parties. Write BEATRICE FOODS COMPANY, Galesburg, Illinois." 12-M-57

FOR SALE: Used 2,000 GPH Creamery Package Sanitary HOMOGENIZER with 50 H.P. 220-3-60-1725 motor. Write to: Equipment Sales Div., LAND O' LAKES CREAMERIES, INC., 2215 Kennedy Street, N. E. Minneapolis 13, Minnesota. 12-M-57

FOR SALE: 1—300 gallon Manton-Gaulin HOMOGENIZERS. 1—6,000 lb. De Laval SEPARATOR Stainless Steel discs. 2—Heil Model E Heavy Duty 10-Wide Soaker Type Bottle WASHERS; half-pints to quarts, automatic load and discharge accumulative load, prerinse, vari-speed drive, temperature regulators, L & G automatic Chlorinator, motor drive, 3-ph. 60 cy. 220 volt; Taylor Recording THERMOMETER on soaker tank, new 1946. Write to: TOLINS & COMPANY, 105 Hudson Street, New York 13, New York. 12-M-57

FOR SALE OR RENT: Two refrigerated International METROS; one with Coldmobile and one with Coldhold. Immediate delivery. Write or call BERMAN SALES COMPANY, 925 N. Godfrey Street, Allentown, Pennsylvania. HEmlock 3-5266. 12-M-57

BARGAINS FOR SALE—
The RUDERMAN MACHINERY EXCHANGE of Gouverneur, N. Y., one of the largest diversified Machinery and Equipment Dealers in America, can furnish you with all your needs in modern ICE CREAM and MILK AND MILK PRODUCTS PLANT EQUIPMENT. ELECTRICAL EQUIPMENT of every description also available.
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FOR SALE: One Cherry-Burrell 40 quart Triple Dasher. Direct Expansion Freezer. One Cherry-Burrell Super Plate COOLER. Model 60-J Press. Press includes 20,000 pounds per hour cooler; plus 5,000 pounds per hour short-time plates. One single compartment Milk Receiving Weight Scale; Including Toledo Dial Scale. Weighs up to 650 pounds. $2,500.00 Press—$500.00 Scales, Net — F.O.B. Augusta, Georgia. Write to: GREENES' INCORPORATED, 400 East Boundary, Augusta, Georgia. 12-M-57

EQUIPMENT FOR SALE

FOR SALE—C.B. FILLER for American Can containers, 25 quarts per minute, one year old, price $5,500, cost, new $8,000. Write to: DURLING FARMS, Whitehouse, New Jersey. 12-M-57

Jr. VACREATORS — Doering Printers — Rotary Can Washers—300 gallon C.B. Spray PASTEURIZER—S. & S. Write to: CENTRAL WEST, Box 222 Makena, Illinois. 12-M-57

De Laval 192-188 Combination Separators Clarifiers. S. & S. Separator bowl—20,000 lbs. S.S. H or C clarifying bowl. Westpnalia—Separator factory reconditioned HOMOGENIZERS. Write to: CENTRAL WEST, Box 222, Makena, Illinois. 12-M-57

FOR SALE: G.93 Federal FILLER—9 valve, complete with S.S. float. Will handle half pints through gallon jugs. Available at once. Call or write BOLGER FARMS DAIRY, 7601 S. Western Avenue, Chicago, Illinois. Phone GRovehill 6-1200. 12-M-57

FOR SALE: 500 gallon K-L Manton-Gaulin Homo. $1,000. Smith-Lee B.H. 40 Cellophane HOODER, $300. 4 Wide R. G. Wright bottle WASHER, $500. 2,500 lb. Frick Sweet Water Ice BUILDER, compressor and pump, $800. Write to: DURLING FARMS, Whitehouse, New Jersey. 12-M-57

FOR SALE: Good used equipment for all types of milk plants. Write us as to what you need and we will mail late list of available items with prices. Write to: OTTO BIEFELD COMPANY, Watertown, Wisconsin. 12-M-57

Model 125 CGD, 400 CGD, and 500 CGD Manton-Gaulin HOMOGENIZERS. Rebuilt and in Excellent Condition. Guaranteed. Write to: OHIO CREAMERY SUPPLY COMPANY, 701 Woodland Avenue, Cleveland 15, Ohio. 12-M-57

FOR SALE: 1 C-B Model E, 4-Wide Bottle WASHER No. 43-1020 with 3 HP cir. pump motor. Will take gills to ½-gal. Rd. & Sq., but not oblong. Price $1,800 FOB Santa Rosa. Write to: PETALUMA CO-OPERATIVE CREAMERY, Western Avenue and Baker Street, Petaluma, California. 12-M-57

2 Cup-O-Matic Bulk Milk VENDORS. Use 9 Oz. Cup. Capacity: 2-20 quart cans in position, 2-20 quart cans in bottom storage. Used six months and in excellent condition. Price new $1,025.00. Will sell for $750.00 each. Write to: BREISCH'S DAIRY, Catawissa, Pennsylvania. 12-M-57

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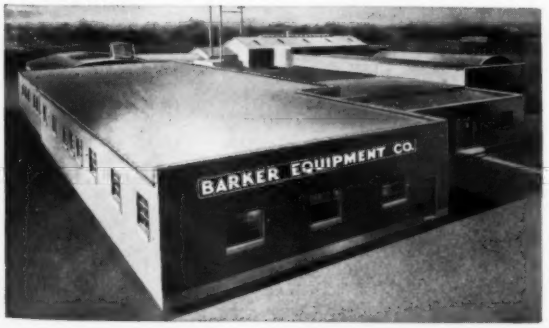

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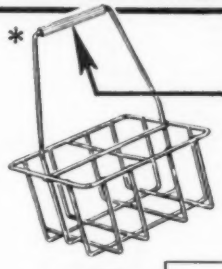

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Model	Size	No. Packed to Carton	Shipping Wt Per Carton
4 S	4 Sq. Quart Bottles	10	7 lbs.
6 S	6 Sq. Quart Bottles	6	6 lbs.
8 S	8 Sq. Quart Bottles	6	7¼ lbs.
4 R	4 Rd. Quart Bottles	10	8 lbs.
2-½ SR	2 Sq. or Rd. ½ Gal. Bottles	10	7 lbs.
4-½ SR	4 Sq. or Rd. ½ Gal. Bottles	6	7¼ lbs.
2-½ O	2 Oblong ½ Gal. Bottles	10	7 lbs.
4-½ O	4 Oblong ½ Gal. Bottles	6	7¼ lbs.

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FALL SPECIALS HARD TO GET ITEMS—Container FILLER Canco Number 15; Milk Bottle FILLERS—1 Cemac 28, 1 Cemac 14, 1 Cherry-Burrell K-24, 1 Cherry-Burrell GV-16, 1 Cherry-Burrell GV-20; 1,000 gallon and 3,000 gallon Steriline S.S. Milk Storage TANK (not cold wall) 300 gallon PASTEURIZERS, one Pfaudler, one Creamery Package, two Oakes & Burger; 1 Creamery Package all S.S. HTST—7,000 lbs. Many other items. Send us your inquiries. What do you have for sale? WE FLY TO BUY. Write to: LESTER KEHOE MACHINERY CORPORATION, P. O. Box 82, Staten Island 4, New York.

FOR SALE: STORAGE TANKS: 400 gallon Pfaudler, 1,200 gallon insulated, 3,290 gallon insulated. TRUCK TANKS: 3,590 gallon, 3—3,000 gallon Heil. Double DRUM DRYERS—42"x120", 42"x100". Ammonia COMPRESSOR—York 12½x14½, 125 tons. EVAPORATORS Double Effect 588 and 1,100 sq. ft. VACUUM PAN—Rogers 6' dia. Write to: PERRY EQUIPMENT CORPORATION, 1409 N. 6th Street, Philadelphia 22, Pennsylvania. 12-M-57

"Every Dairy can afford to make superior cottage cheese and other blended products with the most effective blender made. 200 lb. size only $1,095. 500 lb. $2,395. Ask for full details. Write to: GIRTON MFG. COMPANY, Millville, Pennsylvania." 12-M-57

2,500 gal. S. S. Truck TANK; (3) 2,950 gal. S. S. in and out Truck TANKS on semi-trailers; 3,600 gal. S. S. Truck TANK on semi; 3,200 gal. Storage TANK; Two Cherry-Burrell Model C Superplate COOLERS—one with 38 plates, one with 57 plates; Creamery Package 75 Full Flow Plate EXCHANGER in three sections; 35 gal. Mojonnier S. S. steam jacketed and double agitated KETTLE; Ste-Vac SV-12 PREHEATER; Henszey 30,000 lb./hr. PREHEATERS; Peebles 14,000 lb./hr. PREHEATERS; Chester-Jensen VACUMIZER, Model E, 20,000 lb./hr.; 4 Vacuum PANS, 36" Rogers, 48" Mojonnier, 72" Rogers, 72" Harris; 1,000 and 1,250 gal. S.S. HOTWELLS and Surge TANKS; Double Roll Dryers—Buflovac and American, all sizes for edible and feed; Cabinet COOLERS — Mojonnier, Cherry-Burrell, Jensen, all sizes; HOMOGENIZERS and SEPARATORS, all sizes; 300 to 600 gal. Pasteurizing VATS; etc. Write to: BEST EQUIPMENT COMPANY, 1737 W. Howard Street, Chicago 26, Illinois. AMbassador 2-1452. 12-M-57

FOR SALE: Complete LP Receiving room EQUIPMENT, used only 2 years, excellent condition; 8 C.P.M. WASHER, S.S. Hood, side sheets and wash tanks, S.S. milk saver 1,000 lb. Weigh CAN, 1,600 lb. receiving tank, vacuum sampler, galvanized can conveyor, available in 60 days. Write to: ASHLEY DAIRY COMPANY, Battle Creek, Michigan. 12-M-57

1—CB Bantam Style F 6 Wide Bottle WASHER. 1—CB Model 6-18 Bottle FILLER. 1—U. S. Dairies paper bottle FILLER. 1—30 HP Clayton Steam GENERATOR, gas operated. Other equipment too numerous to mention. Write to: Box 103. 12-M-57

EQUIPMENT WANTED

WANTED: Cherry-Burrell 24 valve Gra-Vac FILLER. Also WASHER to wash half gallons and gallons. Write to : Box 108. 12-M-57

WANTED: 300-400 and 500 gallon round PROCESSORS and PASTEURIZERS—Must be 3A Standards. Write to: CENTRAL WEST, Box 222, Mokena, Illinois. 12-M-57

WANTED TO BUY: 3,000 Used Wooden CASES to hold 12 Handi Square quarts. Write to Box 105. 12-M-57

WANTED: 1,500 or 2,000 Gallon Stainless Steel Insulated Storage TANK. Must be in good condition. Write to: C. R. Wilson, BLU-RIBBON PRODUCTS, INC., 1840 Lee Street, Alexandria, Louisiana. 12-M-57

WANTED

WANTED TO BUY: SKIM MILK IN TANK LOTS: year 'round supply or surplus deal. Write to: HENRY GALLAGHER, East Diamond Avenue, Hazleton, Pennsylvania. 12-M-57

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REBUILD THOSE LEAKING VALVES!! SANITARY Valves rebuilt for a fraction of the cost of a new valve. Prices submitted on request. Write to: STUART W. JOHNSON & COMPANY, 611 Main Street, Lake Geneva, Wisconsin. 12-M-57

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SALES PROMOTION

NEW ITEM FOR THE DAIRY INDUSTRY. A money-maker for established factory representatives now calling on the dairy industry. Not a jobber item. All States open except: Georgia, Florida, Alabama, South Carolina, and Tennessee. Only reliable men with good sales records will be considered. Write for complete details: Box 107. 12-M-57

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To take charge of Processing and Packaging Milk and Dairy Products, including small amount of custard and ice cream mix. Well equipped plant. Ability to handle men and know-how in producing quality a necessity. Located in Federal Marketing area. Write to: Box 106.

SALES MANAGER to supervise Retail and Wholesale Milk Routes Western Pennsylvania. Splendid Opportunity. Write stating Full Particulars, Age, Experience, Qualifications. Write to: Box 101. 12-M-57

Experienced pasteurizer and cottage cheese maker for modern milk plant. Good wages for qualified man. Plant located on the West Coast. Write to: Box 100. 12-M-57

"SALESMAN WANTED: We want a front runner with proven sales record for Chicago and surrounding territory. Must know plant processing thoroughly. The requirements are high—but so are the opportunities. Write to: GIRTON MFG. COMPANY, Millville, Pennsylvania." 12-M-57

SELL FOR EXTRA INCOME—Paper and Plastic packaging used by Dairy and Ice Cream manufacturers. We are Mfg. Rep's with exclusive franchises in New York-New England area for the nation's leading manufacturers. Reply Box 102. 12-M-57

POSITION WANTED

In Dairy Industry, any interesting position with opportunity for career advancement. Graduate New York School of Agriculture. Veteran, New York State Babcock Gerber license. Age 25 years. Held former positions as Quality Control Supervisor and Manager of medium size Dairy. Write to: Box 115. 12-M-57

POSITION WANTED as Creamery Foreman or Cottage Cheese maker. Experienced in pasteurizing bottling milk cream. All Dairy products. Make sour cream, buttermilk. Starter. Twenty-five years' experience, 52 years old, in good health, single. Position must be steady. Write to: A. C. LIBBY, Brasher Falls, New York. 12-M-57

Young high-caliber SALESMANAGER with Dairy Vitamin Concentrate and Feed Supplement Sales Experience in Florida and Southeast—with good connections! Would like lucrative sales position of earnings exceeding $11,000 yearly. Write to: Box 98. 12-M-57

POSITION WANTED: By experienced **butter** and **cheesemaker.** Michigan butter grader's and Milk tester licenses. Dairy Manufacturing Short Course Graduate. Age 33, married, sober, steady. Presently managing butter and cheese plant, also Grade A milk sales. Annual volume $700,000. Will relocate anywhere. Available in three weeks. Write to: Box 99. 12-M-57

POSITION WANTED in production or sales. Young man, age 30, desires new connection with progressive organization. Five years' experience in large operations, including Evap, Ice Cream Mix, Milk Powder. Dairy School graduate. Write to: Box 109. 12-M-57

POSITION WANTED: College graduate, Veteran, married, 27 years old with five years' experience in Dairy Maintenance, Fluid and manufactured Products, Laboratory and Management, desires position as Plant Superintendent or Assistant. Write to: Box 110. 12-M-57

POSITION WANTED as plant manager with an aggressive responsible organization. Dairy school graduate, 25 years of practical experience and technical training, thorough knowledge of all plant supervising production, quality control and handling personnel. Wishes permanent connection with a milk, ice cream or cottage cheese plant. Recommendations. Write to: Box 104. 12-M-57

BUSINESS OPPORTUNITIES

HOW'S BUSINESS? Need more Betco Sales will guarantee you as a Dairy owner a 25 to 40% increase in your retail delivery in 60 to 90 days or your money back. If you can use more business, a 25 to 40% increase, and can qualify as to quality and financial ability, then do this: Name of Firm — Address — City — State — Signature of Applicant. Only applications for Ohio, New York and Pennsylvania accepted in January, February, and March of 1958. Other States East of Mississippi in April and May 1958. All States after May 31, 1958. Write to: BETCO SALES, 26 Grand Avenue, Rochester 9, New York. 12-M-57

FOR SALE: Small Retail Milk Business in N. W. Pennsylvania. $65,000.00 sales per year, over 10% net. Will sell trucks, accounts and business for $12,000.00. Payment of additional $250.00 monthly will rent present milk plant building, garages and completely pay for milk plant equipment, 10 year agreement. Write to Box 114. 12-M-57

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FOR SALE: Retail and Wholesale milk processing and delivering plant in Capital District of New York. Modern buildings and equipment. Processing between 2,000 and 2,500 quarts daily. Ample room for expansion. Credit references required. Write to: Box 111. 12-M-57

BUSINESS OPPORTUNITIES WANTED

WANTED TO BUY: Small to medium sized milk business or working interest, preferably in fast growing Colorado community. Must stand audit. Write to: Box 112. 12-M-57

FOR RENT

FOOD PROCESSING LOFTS FOR RENT: 14,000 sq. ft., tiled, drained, off street loading elevator, minus 0° brine refrigeration; good for all food lines; near 149th St., Third Avenue. Call or write D. WOLCHOK, 217 Broadway, New York 7, New York. BEekman 3-8674. 12-M-57

MISCELLANEOUS: MILK TRANSPORTATION tanks for rent on lease basis. Write to: HENRY GALLAGHER, 329 East Diamond Avenue, Hazleton, Pennsylvania. 12-M-57

EQUIPMENT FOR SALE

1—Ton Truck Body, fully insulated, factory reconditioned, ideal for butter or produce delivery. Reasonable. Write to: ROY'S SANITARY DAIRY, Monroe, Wisconsin. Tel.: 1911. 12-M-57

FOR SALE: Following Used Equipment in good operating condition: BOILERS, BURNERS, MILK BOTTLES, MILK CASES, CHEESE EQUIPMENT, CLARIFIERS, CABINET and Plate COOLERS, GLASS and paper bottle FILLERS, Milk HEATERS, plate and tubular, HOMOGENIZERS, Ice Cream FREEZERS, Milk and Cream PASTEURIZERS, Sanitary and water circulating PUMPS, REFRIGERATION, SCALES, SEPARATORS, TESTERS, Bottle and Can WASHERS, Stainless Steel Weigh CANS. "Write for complete information, price, and delivery." Write to: Box 116. 12-M-57

Borden Forms Western Division, Sees Bright Future

FORMATION OF a new and autonomous operating unit, to be known as the Borden Company, Western Division, and to include all of the company's dairy and food products operations in the eleven-state western area, was announced November 26 by Harold W. Comfort, president. The integration is designed to strengthen Borden's plans for expanded business activity in the western market.

Included in the integrating move are operations currently known as the California (Fluid Milk and Ice Cream) Division, the Pacific Cheese Division and three western districts of the Borden Food Products Company. Operations of the Borden Company's Special Products and Chemical Divisions are not affected.

Mr. Comfort listed four major reasons for forming the Western Division:

"1. As an expression of our confidence in the future of the western region, and its potentialities for growth and expansion.

"2. Recognition of the fact that this area is an entity, a unit in itself, with its own unique pattern of living, with distinctive requirements for processing, and particularly, distribution.

"3. This is a planned program; it is a framework for our future growth in the West, and

"4. The tremendous growing consumer franchise, an acceptance of the Borden name and its century of business experience."

The Western Division will have G. F. Morrill as its president, and A. S. Parlett as executive vice president. Vice presidents include Dudley N. Carlsen, Duane J. Louis and L. S. Merrill. Paul L. Scott will be treasurer and secretary. R. B. Keator will be chairman of the new Division's directing board.

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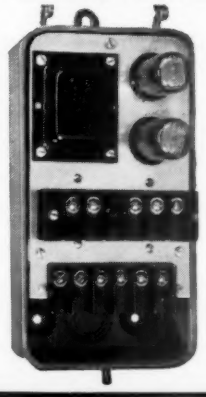

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INDEX OF ADVERTISERS

A	Page
American Can Co.	49
American Dairy Association	45
American Dry Milk Institute	62
American Steel & Wire Division	41
APV Co., Inc., Dairy Division	95
B	
Barker Equipment Company	105
Boyertown Auto Body Works, Inc.	57
C	
Centrico, Inc.	55
Cherry-Burrell Corp.	6, 7
Chester-Jensen Co., Inc.	37
Chevrolet Motor Div. (General Motors Corp.)	53
Chocolate Products	81
Columbia-Geneva Steel Division	41
Continental Oil Co.	59
Cramer Assoc. Inc., Ward C.	100
Creamery Package Mfg. Co.	110
Crest Foods Co.	4
Crown Cork & Seal Co.	15
D	
Dairypak Incorporated	51
De Laval Separator Co., The	42, 43
Diamond Alkali Co.	14
Dianol Division Mills-Pearson Corp.	97
Divco-Wayne Corp.	71
Doering & Sons, C.	17
E	
E-Mac Dairy Brush Co.	76
Erickson Co., C. E.	16
Erie Crate & Mfg. Co.	90
Eze-Orange Co.	3
F	
Food Engineering Corp.	8, 9
Forbes Co., The Benjamin P.	89
Fort Wayne Dairy Equipment Co.	84
G	
Garver Mfg. Co., The	106
G & H Products	86
Girton Manufacturing Co.	2
Golden Guernsey, Inc.	93
Gundlach Co., G. P.	58
H	
Hackney Bros. Body Co.	21
Haynes Mfg. Co., The	17, 89, 105, 107, 109
I	
International Paper Co.	39
J	
Jamison Cold Storage Door Co.	10
K	
Kari-Kold Company	83
Kendall-Lamar Corp.	25

K	Page
King Zeero Co.	50
Kraft Foods Co.	23
L	
Lathrop-Paulson Co.	33
Liberty Glass Co.	69
Lumenite Electronic Co.	107
M	
Manton-Gaulin Mfg. Co.	78, 79
Mid-West Producers Creameries	91
Mojonnier Bros. Co.	62
Mueller Co., Paul	75
Murphy Body Works, Inc.	72
N	
National Tube Division	41
O	
Owens-Illinois Glass Co.	11
P	
Penn-Michigan Mfg. Corp.	92
Pfaudler Co., The	63
Punxsutawney Co.	80
Q	
Quirk Mfg. Co.	35
S	
Saucier & Sons, Chas.	82
Smith-Lee Co., Inc.	73
Solar Permanent Co. (Division U. S. Industries, Inc.)	38
Solvay Process Division (Allied Chemical & Dye Corporation)	87
Sparta Brush Co., Inc.	64
Stoelting Bros.	13
S & S Products, Inc.	66
Strahman Valves, Inc.	18
Sun Oil Co.	31
T	
Tennessee Coal & Iron Division	41
Tetra Pak Corporation	19
Thatcher Glass Mfg. Co., The	65
Thomsen & Sons, L. C.	76
Toledo Scale Co.	85
U	
Union Carbide Chemical Co. (Div. of Union Carbide Corp.)	77
United Extract Laboratories, Inc.	60
United States Steel Co.	41
United States Steel Export Co.	41
United States Steel Supply Division	41
United Steel & Wire Co.	96
V	
Verley & Co., Albert	106
W	
Want Ads	104, 105, 106, 107
Waukesha Foundry	94
Wood Co., John Superior Metalware Div.	68

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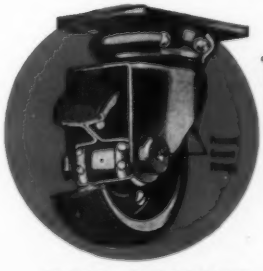

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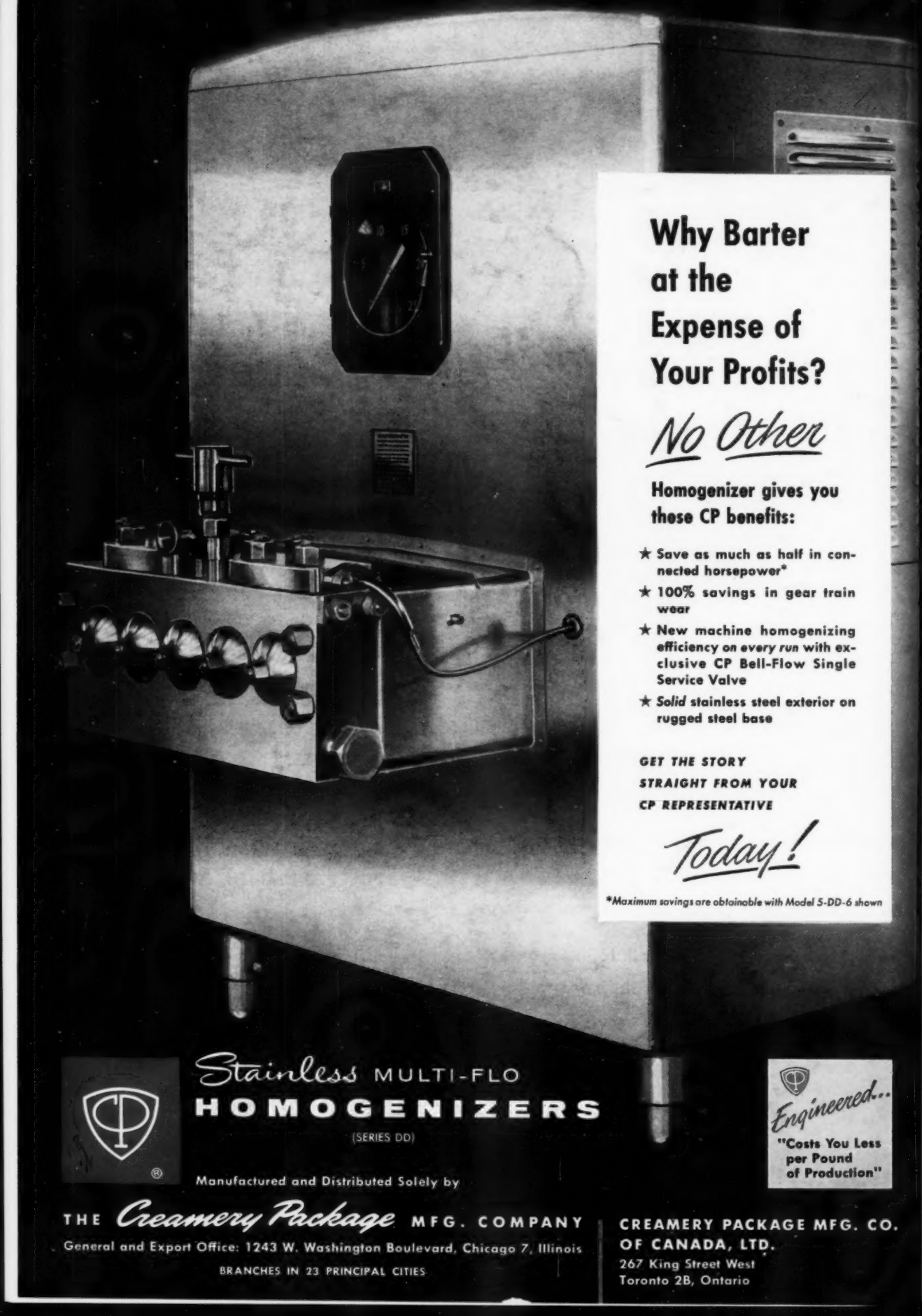

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